CHAPTER 16

Wilderness Management Implementation Plan

The following is a compilation of future and ongoing management actions to be taken to fully implement this Wilderness Management Plan. Each management action, described earlier in this Plan, is listed under a corresponding Management Objective (see Chapter 1, Goals and Objectives). In addition, the actions are referenced by the chapter(s) in which they are described. A summary table follows which outlines the action, target goals, and staff responsibilities.

Wilderness Management Plan Goals

1. *Provide guidance and describe strategies for meeting legislative and policy mandates on wilderness management while providing recreational opportunities consistent with wilderness for a broad range of visitor experiences and settings, and preserving and protecting the natural, cultural, and social resources of Grand Canyon National Park.*

2. *Provide for the continuity of wilderness management throughout changes of park administration and staff.*

Actions

- Implement wilderness management policies for areas of proposed wilderness in Grand Canyon National Park.

- Implement minimum requirement strategy for public and administrative use in Grand Canyon National Park.

- Prepare other Park management plans consistent with the Wilderness Management Plan.

- Establish and maintain Park staffing levels needed to ensure that wilderness management responsibilities are being met in accordance with the NPS Wilderness Management Guidelines, including the
  - Wilderness Steering Committee
  - Wilderness Coordinator
  - Wilderness Rangers
  - Wilderness Trail Crew

Management Objective One

Establish and implement a permit system that

a) serves the visitor by providing the opportunity to obtain permits for wilderness and nonwilderness areas that yield the type of experience they seek

b) serves Park management by providing an effective way to educate the public on low-impact practices, ethics, and safety

c) serves Park management by providing data on hiker use levels and distribution in order to make informed decisions regarding the management and protection of backcountry and wilderness resources.

Actions

- Upgrade automated reservation and permits system, and improve customer service by increasing staff, communications and hours of operation. [Chapter 5, Backcountry Permit System; Appendix G, Backcountry Reservation and Permit System]

- Distribute quarterly wilderness-use statistics to Wilderness District, Trail Crew, Interpretive Staff and Science Center. [Chapter 5, Backcountry Permit System; Chapter 10: Interpretation and Education; Chapter 12, Monitoring and Research]

- Show educational video in the Visitor Contact Stations and the Backcountry Office; distribute to permit holders, and interested groups. [Chapter 5, Backcountry Permit System; Chapter 10, Interpretation, Education, and Information]

- In cooperation with the Navajo, Havasupai and Hualapai Tribes, establish a cooperative permitting system for use on Tribal and Park lands. [Chapter 5, Backcountry Permit System; Chapter 15, Havasupai Traditional Use Lands; Appendix E, Recreational Opportunities and Permit Information for Adjacent Lands]

Management Objective Two

Establish indicators and standards for desired visitor experiences, and biophysical and cultural resources; monitor regularly the condition of these indicators; and take management action as necessary to meet these standards.

Actions

- Continue Rapid Campsite Assessment methodology for campsite monitoring. Establish a monitoring schedule based on use statistics and trend information. Conduct baseline campsite inventory in new use areas, and complete inventory in Wild use areas. [Chapter 6, Campsite Management; Chapter 12, Monitoring and Research]

- Implement a monitoring program based on sociological research and previous monitoring programs. Focus on users in wilderness areas. [Chapter 12, Monitoring and Research]

- Conduct archeological survey and monitoring along popular trails and campsites in the following areas: Grandview Complex, Hermit-Monument Complex, Thunder River/Deer Creek Complex [Chapter 6, Campsite Management; Chapter 7, Trails Management; Chapter 12, Monitoring and Research; Chapter 14, Cultural Resources Management]

- Develop and implement action plans for rehabilitation of campsites and trails in the following use areas: Horseshoe Mesa, Hermit Creek, Monument Creek, Upper Tapeats. [Chapter 6, Campsite Management; Chapter 7, Trails Management; Chapter 12, Monitoring and Research; Chapter 13, Rehabilitation and Restoration of Recreational Impacts]

- Establish designated campsites, and rehabilitate impacted areas in the following use areas: Deer Creek, Cape Final, Point Sublime, Fire Point, Swamp Point, and Pasture Wash. [Chapter 6, Campsite Management: Chapter 12, Monitoring and Research; Chapter 13, Rehabilitation and Restoration of Recreational Impacts]

- Develop and implement site data recovery plan for archeological sites located in the following use areas: Hermit Creek, Monument Creek, Horseshoe Mesa, Cottonwood Creek, Clear Creek, Cremation, Tanner. [Chapter 12, Monitoring and Research; Chapter 14, Cultural Resources Management]

- Establish Semi-Primitive Mechanized Opportunity Class to describe conditions and standards for nonwilderness primitive road corridors. [Chapter 3, Wilderness Management Planning Framework; Chapter 4, Recreational Uses of Wilderness; Chapter 6, Wilderness Campsite Management; Chapter 8, Semi-Primitive Access and Facilities]

- Determine eligibility for National Register of Historic Places for the Santa Maria Springs shelter, Signal Hill Firetower, Kanabownits Cabin, and the Kanabownits Firetower. Upon completion of this process, a determination regarding course of action will be made. [Chapter 8, Semi-Primitive Access and Facilities; Chapter 14, Cultural Resources Management]

- Conduct water quality and flow data monitoring at wilderness destinations and potential areas of impact on a cyclic basis. [Chapter 12, Monitoring and Research Program]

- Conduct an inventory of all tributary streams to quantify flow data and riparian vegetation. Adopt methods for determining suitability of the Colorado River and its tributaries for inclusion in the National Wild and Scenic Rivers System. [Chapter 11, Ecosystem Management; Chapter 12, Monitoring and Research Program]

Management Objective Three

Provide access consistent with wilderness values including protection of natural and cultural resources. Preserve the character of individual trails and establish minimal standards for primitive road maintenance.

Actions

- Restore historic trails in Hermit, Grandview, and Thunder River/Deer Creek Complexes. [Chapter 7, Trails Management; Chapter 8, Semi-Primitive Access and Facilities; Chapter 12, Monitoring and Research; Chapter 14, Cultural Resources Management]

- Conduct cyclic maintenance and rehabilitation of Colorado River trails to backcountry attraction sites. [Chapter 7, Trails Management; Chapter 12, Monitoring and Research; Chapter 13, Rehabilitation and Restoration of Recreational Impacts]

- Develop and implement action plans for rehabilitation of rim access trails including: Tanner, New Hance, South Bass, South Canyon, and Nankoweap. Concentrate rehabilitation on upper reaches of trail (within Kaibab to Redwall formations). [Chapter 7, Trails Management; Chapter 13, Rehabilitation and Restoration of Recreational Impacts]

- Upgrade condition of Old Bright Angel from a route to primitive trail standards. [Chapter 7, Trails Management]

- Develop and implement action plan to establish a trail on the old road alignment from Desert View to Cape Solitude. [Chapter 7, Trails Management; Chapter 8, Semi-Primitive Access and Facilities; Chapter 13, Rehabilitation and Restoration of Recreational Impacts]

- Develop and implement an action plan that establishes the "Kanab Plateau Trail," a ten-mile section of existing road network. This will connect Kanab Point with the 150 Mile Canyon Road, and involves restoration of roads to natural conditions. [Chapter 8, Semi-Primitive Access and Facilities; Chapter 13, Restoration and Rehabilitation of Recreational Impacts]

- Develop and implement an action plan that establishes the "Brady Hollow Trail," a nine-mile section of severely damaged road known as the Toroweap Point Overlook Road. This will involve restoration of road sections to natural conditions. [Chapter 8, Semi-Primitive Access and Facilities; Chapter 13, Restoration and Rehabilitation of Recreational Impacts]

- Develop and implement an action plan that establishes the "Cove Trail," a ten-mile section of road to the Cove. [Chapter 8, Semi-Primitive Access and Facilities; Chapter 13, Restoration and Rehabilitation of Recreational Impacts]

- Restore to a natural condition: a) two primitive roads north of New Water Springs on the Hook, b) the Huitzal Spur Road, and c) the Toroweap Valley landfill and access road. [Chapter 8, Semi-Primitive Access and Facilities; Chapter 13, Restoration and Rehabilitation of Recreational Impacts]

- Develop and implement an action plan to relocate 1.4 miles of trail across the Basin. Restore the Basin section of the old W-1 to a natural condition. [Chapter 7, Trails Management; Chapter 7, Semi-Primitive Access and Facilities; Chapter 13, Rehabilitation and Restoration of Recreational Impacts]

Management Objective Four

Establish a coordinated interpretive/ educational program to provide hikers adequate information to plan and execute an enjoyable and safe expedition, whether hiking for a day or for an extended period, and to conduct themselves in a manner which is not damaging to wilderness resources and values.

Actions

- Establish a public Interpretive Program which provides relevant, pre-trip information and focuses on wilderness values, personal safety, and resource protection. [Chapter 5, Backcountry Permit System; Chapter 9, Safety and Emergency Operations; Chapter 10, Interpretation, Education, and Information]

- Establish a coordinated, interagency wilderness educational program for staff which includes 1) wilderness management principles and philosophy; 2) Leave No Trace training; 3) application of the minimum requirement concept; 4) development proficiency in the use of primitive tools; 5) development of minimum impact trail maintenance techniques and fire suppression tactics; 6) development of wilderness safety practices and 7) development of appropriate medical response skills. [Chapter 9, Safety and Emergency Operations; Chapter 10, Interpretation, Education, and Information; Appendix D, Minimum Requirement Decision Process]

Management Objective Five

Provide, through partnerships with adjacent land-managing agencies, information on wilderness and nonwilderness recreational opportunities on adjacent lands, including National Forest Service, Bureau of Land Management, State, and Tribal lands.

Actions

- Provide information on recreational opportunities outside the Park. [Chapter 4, Recreational Use of Wilderness; Chapter 5, Backcountry Permit System; Chapter 15, Havasupai Traditional Use Lands; Appendix E, Recreational Opportunities and Permit Information for Adjacent Lands]

- In cooperation with the Navajo, Havasupai and Hualapai Tribes, establish a cooperative permitting system for use on Tribal and Park lands. [Chapter 5, Backcountry Permit System; Chapter 15, Havasupai Traditional Use Lands; Appendix E, Recreational Opportunities and Permit Information for Adjacent Lands]

Management Objective Six

Provide a reasonable level of public safety, consistent with wilderness areas in accordance with NPS Management Policies and Park guidelines.

Actions

- Establish a coordinated public Interpretive Program which provides relevant, pre-trip information and focuses on wilderness values, personal safety, and resource protection. [Chapter 9, Safety and Emergency Operations; Chapter 10, Interpretation, Education, and Information]

- Distribute educational video to the Visitor Center, permit holders, and interested groups. [Chapter 5, Backcountry Permit System; Chapter 10, Interpretation, Education, and Information.]

Management Objective Seven

Encourage research which adds to an understanding of the Park and contributes to the body of knowledge required for effective management and protection of wilderness resources and values.

Actions

- Expand the Park's research program to obtain accurate information about the Grand Canyon's resources, ecological processes and human influences. [Chapter 11, Ecosystem Management]

- Evaluate the tools and methods of scientific study for impacts on the character of the wilderness. Take reasonable efforts to minimize impacts while maximizing the benefit of scientific investigations by applying the minimum requirement decision process. [Chapter 12, Monitoring and Research; Appendix D, Minimum Requirement Decision Process]

Management Objective Eight

Develop, through partnerships with adjacent land-management agencies, conservation organizations, and institutes of higher learning, an interagency ecosystem-management strategy. The strategy will emphasize restoration and maintenance of natural processes, and viable populations of all native species in natural patterns of abundance and distribution.

Actions

- In the revision of the Fire Management Plan address 1) the restoration of the natural fire regime in wilderness areas, 2) the protection and preservation of genetic integrity, and 3) strategies for restoration, enhancement and protection of threatened or endangered species. [Chapter 11, Ecosystem Management]

- Develop partnership programs to 1) maintain long-term viable carnivore populations, 2) address the control of nonnative plant and animal species, 3) facilitate the design and implementation of studies for the reintroduction of extirpated species, and 4) facilitate the design and implementation of a wildlife conservation strategy. [Chapter 11, Ecosystem Management]
- Adopt methods for determining suitability of the Colorado River and its tributaries for inclusion in the National Wild and Scenic Rivers System. [Chapter 11, Ecosystem Management; Chapter 12, Monitoring and Research Program]

Figure 16.1
Implementation Schedule

Action	Target Date	Responsible Work Units and Partners
1. Upgrade automated permits system, improve communications, increase staffing and hours of operation.	FY98	•Backcountry Office
2. Use area changes: boundaries, use limits, and classification.	FY98	•Backcountry Office •Wilderness District
3. Produce and distribute educational video.	FY98	•Backcountry Office •Interpretation
4. Distribute quarterly wilderness use reports to Park work units.	Ongoing	•Backcountry Office
5. Establish cooperative permit system with Navajo, Havasupai, and Hualapai Tribes.	FY99	•Backcountry Office
6. Conduct baseline campsite inventory in new use areas; complete inventory of Primitive and Wild use areas.	FY00	•Wilderness District •Science Center
7. Conduct sociological monitoring program.	FY00	•Science Center
8. Conduct archeological survey and monitoring along popular trails and campsites.	FY99	•Science Center •Wilderness District

Action	Target Date	Responsible Work Units and Partners
9. Develop and implement actions plans for rehabilitation of designated campsites and trails:		•Trail Crew •Wilderness District •Science Center
a. Horseshoe Mesa	FY99	
b. Hermit Creek	FY99	
c. Monument Creek	FY99	
d. Upper Tapeats	FY99	
10. Establish designated campsites and rehabilitate impacted areas for:		•Trail Crew •Wilderness District •Science Center
a. Deer Creek	FY98	
b. Cape Final	FY98	
c. Point Sublime	FY98	
d. Fire Point and Swamp Point	FY98	
e. Pasture Wash	FY98	
11. Develop and implement site data recovery plans for:		•Science Center •Wilderness District
a. Horseshoe Mesa	FY99	
b. Hermit Creek	FY99	
c. Monument Creek	FY99	
d. Cottonwood Creek	FY00	
e. Tanner	FY00	
f. Cremation	FY01	
g. Clear Creek	FY01	
12. Evaluate significance and determine eligibility for the National Register of Historic Places for:		•Science Center
a. Santa Maria Springs Shelter	FY00	
b. Signal Hill Firetower	FY00	
c. Kanabownits Cabin	FY00	
d. Kanabownits Firetower	FY00	
13. Conduct cyclic water quality and flow data monitoring at potential areas of impact including Hermit Creek, Deer Creek, Tapeats Creek, Horn Creek, and Monument Creek	Annual	•Science Center
14. Conduct inventory of all tributary streams to quantify flow data and riparian vegetation.	FY00	•Science Center •River District

Figure 16.1 Implementation Schedule (Continued)

Figure 16.1 Implementation Schedule (Continued)

Action	Target Date	Responsible Work Units and Partners
15. Develop and implement action plans for historic trail restoration: a. Hermit Complex b. Grandview Complex c. Thunder River/Deer Creek Complex	 FY99 FY99 FY99	•Science Center •Trail Crew •Wilderness District
16. Conduct cyclic maintenance and rehabilitation of Colorado River trails to attraction sites.	Annual	•Trail Crew •Wilderness District •River District •Science Center
17. Develop and implement action plans for rehabilitation of rim access trails: a. Tanner b. New Hance c. South Bass d. South Canyon e. Nankoweap	 FY00 FY00 FY00 FY01 FY01	•Trail Crew •Science Center •Wilderness District •U.S. Forest Service
18. Upgrade condition of Old Bright Angel Trail from a route to primitive trail standards.	FY00	•Trail Crew •Corridor District •Science Center
19. Develop and implement action plan to establish trails on the old road alignments: a. Desert View to Cape Solitude b. Kanab Point to 150 Mile Canyon Road c. 9 miles of Toroweap Point Overlook Road d. 10 miles of road to The Cove	 FY99 FY00 FY00 FY00	•Science Center •Trail Crew •North Rim District
20. Restore to natural conditions: a. Two roads north of New Water Springs on the Hook b. Huitzal Spur road c. Vulcan Spur road d. Toroweap landfill and access road	 FY00 FY01 FY01 FY01	•Science Center •Wilderness District •Lake Mead NRA •Bureau of Land Management
21. Develop and implement action plan to relocate trail across the Basin. Restore old W-1 road to natural condition.	FY00	•Science Center •North Rim District •Road and Trail Crews

Action	Target Date	Responsible Work Units and Partners
22. Establish public Interpretive Program on wilderness values, personal safety and resource protection.	FY99	•Interpretation •Wilderness District •Backcountry Office •Grand Canyon Association Field Institute •National Outdoor Leadership School (NOLS)
23. Establish interagency wilderness education program for staff.	FY99	•Interpretation •Arthur Carhart National Wilderness Training Center •National Outdoor Leadership School (NOLS)
24. Expand research program.	FY02	•Science Center •Grand Canyon Monitoring and Research Center
25. Develop partnership programs which address a. viable carnivore populations b. control of nonnative species c. studies for reintroduction of extirpated species d. wildlife conservation strategy	 FY04 Ongoing FY98 FY04	•Science Center
26. Conduct suitability study for Colorado River and tributaries for inclusion in the National Wild and Scenic Rivers System.	FY03	•Science Center •River District •Grand Canyon Association Field Institute

Figure 16.1 Implementation Schedule (Continued)

Appendix A

Wilderness Act of 1964

Public Law 88-577
(16 U.S. C. 1131-1136)
88th Congress, Second Session
September 3, 1964

AN ACT

To establish a National Wilderness Preservation System for the permanent good of the whole people, and for other purposes. Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled.

Short Title

SECTION 1. This Act may be cited as the "Wilderness Act."

WILDERNESS SYSTEM ESTABLISHED—
STATEMENT OF POLICY

SECTION 2.(a) In order to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States and its possessions, leaving no lands designated for preservation and protection in their natural condition, it is hereby declared to be the policy of the Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness. For this purpose there is hereby established a National Wilderness Preservation System to be composed of federally owned areas designated by the Congress as "wilderness areas," and these shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness; and no Federal lands shall be designated as "wilderness areas" except as provided for in this Act or by a subsequent Act.

(b) The inclusion of an area in the National Wilderness Preservation System notwithstanding, the area shall continue to be managed by the Department and agency having jurisdiction thereover immediately before its inclusion in the National Wilderness Preservation System unless otherwise provided by Act of Congress. No appropriation shall be available for payment of expenses or salaries for the administration of the National Wilderness Preservation System as a separate unit nor shall any appropriations be available for additional personnel stated as being required solely for the purpose of managing or administering areas solely because they are included within the National Wilderness Preservation System.

DEFINITION OF WILDERNESS

(c) A wilderness, in contrast with those areas where man and his works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of

wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

NATIONAL WILDERNESS PRESERVATION SYSTEM—EXTENT OF SYSTEM

SECTION 3.(a) All areas within the national forests classified at least 30 days before the effective date of this Act by the Secretary of Agriculture or the Chief of the Forest Service as "wilderness," "wild," or "canoe" are hereby designated as wilderness areas. The Secretary of Agriculture shall—
(1) Within one year after the effective date of this Act, file a map and legal description of each wilderness area with the interior and Insular Affairs Committees of the United States Senate and the House of Representatives, and such descriptions shall have the same force and effect as if included in this Act: Provided, however, That correction of clerical and typographical errors in such legal descriptions and maps may be made.

(2) Maintain, available to the public, records pertaining to said wilderness areas, including maps and legal descriptions, copies of regulations governing them, copies of public notices of, and reports submitted to Congress regarding pending additions, eliminations, or modifications. Maps, legal descriptions, and regulations pertaining to wilderness areas within their respective jurisdictions also shall be available to the public in the offices of regional foresters, national forest supervisors, and forest rangers.

(b) The Secretary of Agriculture shall, within ten years after the enactment of this Act, review, as to its suitability or nonsuitability for preservation as wilderness, each area in the national forests classified on the effective date of this Act by the Secretary of Agriculture or the Chief of the Forest Service as "primitive" and report his findings to the President. The President shall advise the United States Senate and House of Representatives of his recommendations with respect to the designation as "wilderness" or other reclassification of each area on which review has been completed, together with maps and a definition of boundaries. Such advice shall be given with respect to not less than one-third of all the areas now classified as "primitive" within three years after the enactment of this Act, and the remaining areas within ten years after the enactment of this Act. Each recommendation of the President for designation as "wilder-

ness" shall become effective only if so provided by an Act of Congress. Areas classified as "primitive" on the effective date of this Act shall continue to be administered under the rules and regulations affecting such areas on the effective date of this Act until Congress has determined otherwise. Any such area may be increased in size by the President at the time he submits his recommendations to the Congress by not more than five thousand acres with no more than one thousand two hundred acres in any one compact unit; if it is proposed to increase the size of any such area by more than five thousand acres or by more than one thousand two hundred and eighty acres in any one compact unit the increase in size shall not become effective until acted upon by Congress. Nothing herein contained shall limit the President in proposing, as part of his recommendations to Congress, the alteration of existing boundaries of primitive areas or recommending the addition of any contiguous area of national forest lands predominantly of wilderness value. Notwithstanding any other provisions of this Act, the Secretary of Agriculture may complete his review and delete such areas as may be necessary, but not to exceed seven thousand acres, from the southern tip of the Gore Range-Eagles Nest Primitive Area, Colorado, if the Secretary determines that such action is in the public interest.

(c) Within ten years after the effective date of this Act the Secretary of the Interior shall review every roadless area of five thousand contiguous acres or more in the national parks, monuments, and other units of the national park system and every such area of, and every roadless island within, the national wildlife refuges and game ranges, under his jurisdiction on the effective date of this Act and shall report to the President his recommendation as to the suitability or nonsuitability of each such area or island for preservation as wilderness. The President shall advise the President of the Senate and the Speaker of the House of Representatives of his recommendation with respect o the designation as wilderness of each such area or island on which review has been completed, together with a map thereof and a definition of its boundaries. Such advice shall be given with respect to not less than one-third of the areas and islands to be reviewed under this subsection within three years after enactment of this Act, not less than two-thirds within seven years of enactment of this Act, and the remainder within ten years of enactment of this Act. A recommendation of the President for designation as wilderness shall become effective only if so provided by an Act of Congress. Nothing contained herein shall, by implication or otherwise, be construed to lessen the present statutory authority of the Secretary of the Interior with respect to the maintenance of roadless areas within units of the national park system.

(d)(1) The Secretary of Agriculture and the Secretary of the Interior shall, prior to submitting any recommendations to the President with respect to the suitability of any area for preservation as wilderness—

(A) give such public notice of the proposed action as they deem appropriate, including publication in the Federal Register and in a newspaper having general circulation in the area or areas in the vicinity of the affected land;

(B) hold a public hearing or hearings at a location or locations convenient to the area affected. The hearings shall be announced through such means as the respective Secretaries involved deem appropriate, including notices in the Federal Register and in newspapers of general circulation in the area: Provided. That if the lands involved are located in more than one State, at least one hearing shall be held in each State in which a portion of the land lies;

(C) at least thirty days before the date of a hearing advise the Governor of each State and the governing board of each county, or in Alaska the borough, in which the lands are located, and Federal departments and agencies concerned, and invite such officials and Federal agencies to submit their views on the proposed action at the hearing or by not later than thirty days following the date of the hearing.

(2) Any views submitted to the appropriate Secretary under the provisions of (1) of this subsection with respect to any area shall be included with any recommendations to the President and to Congress with respect to such area.

(e) Any modification or adjustment of boundaries of any wilderness area shall be recommended by the appropriate Secretary after public notice of such proposal and public hearing or hearings as provided in subsection (d) of this section. The proposed modification or adjustment shall then be recommended with map and description thereof to the President. The President shall advise the United States Senate and the House of Representatives of his recommendations with respect to such modification or adjustment and such recommendations shall become effective only in the same manner as provided for in subsections (b) and (c) of this section.

USE OF WILDERNESS AREAS

SECTION 4. (a) The purposes of this Act are hereby declared to be within and supplemental to the purposes for which national forests and units of the national park and wildlife refuge systems are established and administered and—

(1) Nothing in this Act shall be deemed to be in interference with the purpose for which national forests are established as set forth in the Act of June 4, 1897 (30 Stat. 11), and the Multiple-Use Sustained-Yield Act of June 12, 1960 (74 Stat. 215).
(2) Nothing in this Act shall modify the restrictions and provisions of the Shipstead-Nolan Act (Public Law 539, Seventy-first Congress, July 10, 1930; 46 Stat. 1020), the Thye-Blatnik Act (Public Law 733, Eightieth Congress, June 2, 1948; 62 Stat. 568), and the Humphrey-Thye-Blatnik-Andresen Act (Public Law 607, Eighty-fourth Congress, June 22, 1956; 70 Stat. 326), as applying to the Superior National

Forest or the regulations of the Secretary of Agriculture.
(3) Nothing in this Act shall modify the statutory authority under which units of the national park system are created. Further, the designation of any area of any park, monument, or other unit of the national park system as a wilderness area pursuant to this Act shall in no manner lower the standards evolved for the use and preservation of such park, monument, or other unit of the national park system in accordance with the Act of August 25, 1916, the statutory authority under which the area was created, or any other Act of Congress which might pertain to or affect such area, including, but not limited to, the Act of June 8, 1906 (34 Stat. 225; 16 U.S.C. 432 et seq.); section 3(2) of the Federal Power Act (16 U.S.C. 796 (2); and the Act of August 21, 1935 (49 Stat. 666; 16 U.S.C. 461 et seq.).
(b) Except as otherwise provided in this Act, each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character. Except as otherwise provided in this Act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use.

PROHIBITION OF CERTAIN USES

(c) Except as specifically provided for in this Act, and subject to existing private rights, there shall be no commercial enterprise and no permanent road within any wilderness area designated by this Act and except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.

SPECIAL PROVISIONS

(d) The following special provisions are hereby made:

(1) Within wilderness areas designated by this Act the use of aircraft or motorboats, where these uses have already become established, may be permitted to continue subject to such restrictions as the Secretary of Agriculture deems desirable. In addition, such measure may be taken as may be necessary in the control of fire, insects, and diseases, subject to such conditions as the Secretary deems desirable.
(2) Nothing in this Act shall prevent within national forest wilderness areas any activity, including prospecting, for the purpose of gathering information about mineral or other resources, if such activity is carried on in a manner compatible with the preservation of the wilderness environment. Furthermore, in accordance with such program as the Secretary of the Interior shall develop and conduct in consultation with the Secretary of Agriculture, such areas

shall be surveyed on a planned, recurring basis consistent with the concept of wilderness preservation by the Geological Survey and the Bureau of Mines to determine the mineral values, if any, that may be present; and the results of such surveys shall be made available to the public and submitted to the President and Congress. Mineral leases, claims, etc.

(3) Notwithstanding any other provisions of this Act, until midnight December 31, 1983, the United States mining laws and all laws pertaining to mineral leasing shall, to the same extent as applicable prior to the effective date of this Act, extend to those national forest lands designated by this Act as "wilderness areas"; subject, however, to such reasonable regulations governing ingress and egress as may be prescribed by the Secretary of Agriculture consistent with the use of the land for mineral location and development and exploration, drilling, and production, and use of land for transmission lines, waterlines, telephone lines, or facilities necessary in exploring, drilling, production, mining, and processing operations, including where essential the use of mechanized ground or air equipment and restoration as near as practicable of the surface of the land disturbed in performing prospecting, location, and, in oil and gas leasing, discovery work, exploration, drilling, and production, as soon as they have served their purpose. Mining locations lying within the boundaries of said wilderness areas shall be held and used solely for mining or processing operations and uses reasonably incident thereto; and hereafter, subject to valid existing rights, all patents issued under the mining laws of the United States affecting national forest lands designated by this Act as wilderness areas shall convey title to the mineral deposits within the claim, together with the right to cut and use so much of the mature timber therefrom as may be needed in the extraction, removal, and beneficiation of the mineral deposits, if the timber is not otherwise reasonably available, and if the timber is cut under sound principles of forest management as defined by the national forest rules and regulations, but each such patent shall reserve to the United States all title in or to the surface of the lands and products thereof, and no use of the surface of the claim or the resources therefrom not reasonably required for carrying on mining or prospecting shall be allowed except as otherwise expressly provided in this Act: Provided, That, unless hereafter specifically authorized, no patent within wilderness areas designated by this Act shall issue after December 31, 1983, except for the valid claims existing on or before December 31, 1983. Mining claims located after the effective date of this Act within the boundaries of wilderness areas designated by this Act shall create no rights in excess of those rights which may be patented under the provisions of this subsection. Mineral leases, permits, and licenses covering lands within national forest wilderness areas designated by this Act shall contain such reasonable stipulations as may be prescribed by the Secretary of Agriculture for the protection of the wilderness character of the land consistent with the use of the land for the purposes for

which they are leased, permitted, or licensed. Subject to valid rights then existing, effective January 1, 1984, the minerals in lands designated by this Act as wilderness areas are withdrawn from all forms of appropriation under the mining laws and from disposition under all laws pertaining to mineral leasing and all amendments thereto.
(4) Within wilderness areas in the national forests designated by this Act, (1) the President may, within a specific area and in accordance with such regulations as he may deem desirable, authorize prospecting for water resources, the establishment and maintenance of reservoirs, water-conservation works, power projects, transmission lines, and other facilities needed in the public interest, including the road construction and maintenance essential to development and use thereof, upon his determination that such use or uses in the specific area will better serve the interests of the United States and the people thereof than will its denial; and (2) the grazing of livestock, where established prior to the effective date of this Act, shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the Secretary of Agriculture.
(5) Other provisions of this Act to the contrary notwithstanding, the management of the Boundary Waters Canoe Area, formerly designated as the Superior, Little Indian Sioux, and Caribou Roadless Areas, in the Superior National Forest, Minnesota, shall be in accordance with regulations established by the Secretary of Agriculture in accordance with the general purpose of maintaining, without unnecessary restrictions on other uses, including that of timber, the primitive character of the area, particularly in the vicinity of lakes, streams, and portages: Provided, That nothing in this Act shall preclude the continuance within the area of any already established use of motorboats.
(6) Commercial services may be performed within the wilderness areas designated by this Act to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas.
(7) Nothing in this Act shall constitute an express or implied claim or denial on the part of the Federal Government as to exemption from State water laws.
(8) Nothing in this Act shall be construed as affecting the jurisdiction or responsibilities of the several States with respect to wildlife and fish in the national forests.

STATE AND PRIVATE LANDS WITHIN WILDERNESS AREAS

SECTION 5.(a) In any case where State-owned or privately owned land is completely surrounded by national forest lands within areas designated by this Act as wilderness, such State or private owner shall be given such rights as may be necessary to assure adequate access to such State-owned or privately owned land by such State or private owner and their successors in interest, or the State-owned land or privately owned land shall be exchanged for federally owned land in the same State of approximately equal value under authorities available to the Secretary of Agriculture: Provided, however, That the United States shall

not transfer to a State or private owner any mineral interests unless the State or private owner relinquishes or causes to be relinquished to the United States the mineral interest in the surrounded land.

(b) In any case where valid mining claims or other valid occupancies are wholly within a designated national forest wilderness area, the Secretary of Agriculture shall, by reasonable regulations consistent with the preservation of the area as wilderness, permit ingress and egress to such surrounded areas by means which have been or are being customarily enjoyed with respect to other such areas similarly situated.
(c) Subject to the appropriation of funds by Congress, the Secretary of Agriculture is authorized to acquire privately owned land within the perimeter of any area designated by this Act as wilderness if (1) the owner concurs in such acquisition or (2) the acquisition is specifically authorized by Congress.

GIFTS, BEQUESTS, AND CONTRIBUTIONS

SECTION 6.a) The Secretary of Agriculture may accept gifts or bequests of land within wilderness areas designated by this Act for preservation as wilderness. The Secretary of Agriculture may also accept gifts or bequests of land adjacent to wilderness areas designated by this Act for preservation as wilderness if he has given sixty days advance notice thereof to the President of the Senate and the Speaker of the House of Representatives. Land accepted by the Secretary of Agriculture under this section shall become part of the wilderness area involved. Regulations with regard to any such land may be in accordance with such agreements, consistent with the policy of this Act, as are made at the time of such gift, or such conditions, consistent with such policy, as may be included in, and accepted with, such bequest.

(b) The Secretary of Agriculture or the Secretary of the Interior is authorized to accept private contributions and gifts to be used to further the purposes of this Act.

ANNUAL REPORTS

SECTION 7. At the opening of each session of Congress, the Secretaries of Agriculture and Interior shall jointly report to the President for transmission to Congress on the status of the wilderness system including a list and descriptions of the areas in the system, regulations in effect, and other pertinent information, together with any recommendations they may care to make.

Approved September 3, 1964.

Legislative History

House Reports: No. 1538 accompanying H.R. 9070 (Committee on Interior & Insular Affairs) and No. 1829 (Committee of Conference).
Senate Report: No. 109 (Committee on Interior & Insular Affairs). Congressional Record:
Vol. 109 (1963): April 4, 8, considered in Senate.
April 9, considered and passed Senate.
Vol. 110 (1964): July 28, considered in House.
July 30, considered and passed House, amended, in lieu of H.R. 9070.
August 20, House and Senate agreed to conference report.

Appendix B

NPS Management Policies 1988

Chapter 6 Wilderness Management and Preservation

Management Policies
U.S. Department of the Interior
National Park Service
1988

[Editor's Note: Chapter references at the end of each section refer to chapters *of NPS Management Policies*.]

The National Park Service will manage wilderness areas for the use and enjoyment as the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness. Management will include the protection of these areas, the preservation of their wilderness character, and the gathering and dissemination of information regarding their use and enjoyment as wilderness. Public purpose of wilderness will include recreation, scenic preservation, scientific study, education, conservation, and historical use.

The NPS wilderness management policies are based on statutory provisions of the 1916 NPS Organic Act (16 USC 1 et seq.), and legislation establishing individual units of the national park system.

Although these policies are intended to establish consistent servicewide direction for the preservation, management, and use of wilderness, certain policies may be superseded by statutory provisions that apply to individual wilderness areas, by rights reserved by former landowners, and in Alaska, by applicable provisions of the Alaska National Interest Lands Conservation Act (ANILCA, 16 USC 3101 et seq.).

The following characteristics are used in the Wilderness Act to define and describe a wilderness area. Wilderness is an area

- where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain

- of undeveloped federal land retaining its primeval character and influence, without permanent improvements or human habitation

- which generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable

- which is protected and managed so as to preserve its natural conditions

- which has outstanding opportunities for solitude or a primitive and unconfined type of recreation

- which has at least five thousand acres of land or is of sufficient size to make practicable its preservation and use in an unimpaired condition

- which may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value

These attributes serve both as standards for studying areas and evaluating their suitability for inclusion in the national wilderness preservation system and as objectives to guide NPS actions pertaining to the preservation and use of wilderness areas.

Wilderness Reviews

The National Park Service will continue to review areas that qualify for wilderness study, consistent with provision of the Wilderness Act and subsequent legislation directing that wilderness studies be made.

Wilderness studies will be supported by appropriate documentation of compliance with the National Environmental Policy Act (42 USC 4371 et seq.) and the National Historic Preservation Act (16 USC 470 et seq.).

(See Park Planning Process and Products 2:4)

Criteria for Recommended Wilderness

Lands and waters found to possess the characteristics and values of wilderness, as defined in the Wilderness Act, will be studied for recommendation to Congress for wilderness designation.

Lands that have been logged, farmed, grazed, or otherwise utilized in ways not involving extensive development or alteration of the landscape will be considered for wilderness if at the time of study the effects of these activities are substantially unnoticeable or their wilderness character could be restored through appropriate management actions.

An area will not be excluded from a wilderness recommendation solely because established or proposed management practices require the use of tools, equipment, or structures if those practices are necessary for the health and safety of wilderness travelers or protection of the wilderness area.

Lands will not be excluded from a wilderness recommendation solely because of prior rights or privileges, such as grazing and stock driveways, provided these operations do not involve the routine use of motorized or mechanical equipment and do not involve development and structures to such an extent that the human imprint is substantially noticeable.

Lands subject to mineral exploration and development should be recommended for wilderness only if it is likely that mineral rights will be relinquished, acquired, exchanged, or otherwise eliminated in the foreseeable future.

Lands containing aboveground utility lines will not be recommended for wilderness. Areas containing underground utility lines may be included if the area otherwise qualifies as wilderness and the maintenance of the utility line does not require the routine use of mechanized and motorized equipment. No new utility lines may be

installed in wilderness, and existing utility lines may not be extended or enlarged.

Historic features that are primary attractions for park visitors will not be recommended for wilderness. However, an area that attracts visitors primarily for the enjoyment of solitude and unconfined recreation in a primitive setting may also contain historic features and still be included in wilderness. Typical historic features that may be included are archeological sites, historic trails, travel routes, battle sites, and minor structures. Historic trails may serve and be maintained as part of the wilderness trail system. However, if the planned scope and standard of maintenance would result in the imprint of man's work being substantially noticeable, the trail or other feature should not be included in wilderness.

(See Management Zoning 2:7, Land Protection Plans 3:1, Mineral Development 6:10, Mineral Development 8:12, Grazing 8:14, Trails and Walks (9:9)

Potential Wilderness

A wilderness review may identify lands that are surrounded by or adjacent to lands proposed for wilderness designation but that do not themselves qualify for immediate designation due to temporary incompatible conditions. The legislative proposal may recommend these lands for future inclusion in wilderness when the incompatible condition has been removed. If so authorized by Congress, these potential wilderness areas will become designed wilderness upon the Secretary's determination, published in the *Federal Register*, that they have met the qualifications for designation.

(See General Policy 6:3, Mineral Development 6:10)

Wilderness Management

General Policy

For the purposes of these policies, the term "wilderness" includes the categories of designated wilderness, potential wilderness, and recommended/study wilderness, and these policies apply regardless of category. Designated wilderness is wilderness that has been established by Congress; potential wilderness is wilderness that has been authorized by Congress but not yet established due to temporary incompatible conditions; recommended/study wilderness is in an area that has been recommended to Congress, or is being studied for recommendation, for establishment as wilderness. Caves with all entrances in wilderness will be managed as wilderness.

Wherever a wilderness area is designated within a park, the preservation of wilderness character and resources becomes an additional statutory purpose of the park. Within a designated wilderness area, the preservation of wilderness character and resources while providing for appropriate use is the primary management responsibility (other than activities related to the saving of human life). Activities to

achieve all other statutory purposes of an area designated as wilderness will be carried out in accordance with applicable provisions of the Wilderness Act so as to preserve wilderness resources and character. The establishment of wilderness within a park will in no manner lower the standards evolved for the use and preservation of that area under other statutes.

The National Park Service will manage areas of potential wilderness as wilderness, to the extent that existing nonconforming uses will allow, and will seek to eliminate the temporary conditions that preclude wilderness designation.

The Park Service will take no action that would diminish the wilderness suitability of an area recommended for wilderness study or for wilderness designation until the legislative process has been completed. Until that process has been completed, management decisions pertaining to recommended wilderness and wilderness study areas will be made in expectation of eventual wilderness designation.

All categories of wilderness lands will be classified as natural zones. A wilderness subzone may be used if such a designation will facilitate or support planning activities or management actions.

The National Park Service will seek to achieve consistency in wilderness management objectives, techniques, and practices, on both a servicewide and an interagency basis. The Service will seek to maintain effective intra-agency and interagency communications and will encourage, sponsor, and participate in intra-agency and inter-agency workshops and seminars designed to promote the sharing of ideas, concerns, and techniques related to wilderness management.

(See Management Zoning 2:7, Land Protection Plans 3:1, Potential Wilderness 6:3)

Responsibility

NPS responsibility for carrying out wilderness preservation mandates will be shared by the Director, regional directors, and superintendents of parks with designated, potential, or recommended\study wilderness. Interagency cooperation and coordination and training responsibilities will also be carried out at the Washington, region, and park levels. Wilderness management coordinators will be assigned at each of these administrative levels to carry out these responsibilities effectively and to facilitate efforts to seek servicewide and interagency consistency in wilderness management techniques.

Wilderness Management Plan

The superintendent of each park containing wilderness will develop and maintain a wilderness management plan to guide the preservation, management, and use of that wilderness. This plan may be developed as a separate document or as an action component of another appropriate management plan, such as the general management plan or backcountry

management plan, and it will be supported by appropriate documentation of compliance with the National Environmental Policy Act and the National Historic Preservation Act. The plan will be developed with public involvement and will contain specific, measurable management objectives that address the preservation of wilderness-dependent cultural and natural resources and values in order to achieve the public purposes specified by the Wilderness Act and other appropriate legislation.

(See Park Planning Process and Products 2:4)

Management Techniques

The Wilderness Act generally prohibits motorized equipment or mechanized transport in designated wilderness areas; however, it allows them "as necessary to meet minimum requirements for the administration of the area for the purpose of this Act." In protecting wilderness character and resources and in managing wilderness use in accordance with the Wilderness Act, the National Park Service will adhere closely to the "minimum tool" concept. Superintendents, in accordance with the wilderness management plan, will select the minimum tool or administrative practice necessary to successfully and safely accomplish the management objective with the least adverse impact on wilderness character and resources. All decisions pertaining to administrative practices and use of equipment in wilderness will be based on this concept. Potential disruption of wilderness character and resources and applicable safety concerns will be considered before, and given significantly more weight than, economic efficiency. If some compromise of wilderness resources or character is unavoidable, only those actions that have localized, short-term adverse impacts will be acceptable.

Administrative use of motorized equipment or mechanical transport, including motorboats and aircraft, will be authorized in accordance with the park's wilderness management plan only (1) if determined by the superintendent to be the minimum tool needed by management to achieve the purposes of the area, or (2) in emergency situations involving human health or safety or the protection of wilderness values. Such management activities will be conducted in accordance with all applicable regulations, policies, and guidelines and, where practicable, will be scheduled to avoid creating adverse resource impacts or conflicts with visitor use.

The wilderness management plan will establish indicators, standards, conditions, and thresholds above which management actions will be taken to reduce impacts. The National Park Service will monitor resources and document use. Where resource impacts or demands for use exceed established thresholds or capacities, superintendents may limit or redirect use. Physical alterations, public education, general regulations, special regulations, and permit systems, as well as local restrictions, public use limits, closures, and designations imple-

mented under the discretionary authority of the superintendent (36 CFR 1.5), may all be used in managing and protecting wilderness.

(See Monitoring of Wilderness Resource 6:5, Management of Recreational Use 8:2, Emergency Preparedness and Emergency Operations 8:6, Search and Rescue 8:6, Aircraft Use 8:8)

Monitoring of Wilderness Resources

In every park containing wilderness, the conditions and long-term of wilderness resources will be monitored to identify needs for, and results of management actions. Given that wilderness is described in the Wilderness Act as an area untrammeled by man, where outstanding opportunities for solitude and unconfined recreation exist, every wilderness monitoring program will not only assess physical and biological resources, but also identify what impacts people have on resources and values and what impacts they have on other people using the wilderness. These monitoring programs will also be designed to identify whether or not wilderness resources are being impacted by human activities conducted outside the wilderness, and if so, to determine the nature, magnitudes, and probable sources of those impacts.

(See Science and Research 4:2, Inventory and Monitoring 4:4, Research 6:6)

Management Facilities

Part of the definition of wilderness as provided by the Wilderness Act is undeveloped federal land retaining its primeval character and influence, without permanent improvements. Accordingly, authorizations of NPS administrative facilities located in wilderness will be limited to the types and minimum number essential to meet the minimum requirements for the administration of the wilderness area. A decision to construct, maintain, or remove an administrative facility will be based primarily on whether such a facility is required to preserve wilderness character or values or essential to ensure public safety, not on considerations of administrative convenience, economy of effect, or convenience to the public. Maintenance or removal of historic structures will additionally comply with cultural resource protection policies.

Ranger stations, patrol cabins, associated storage or support structures, drift fences,a nd facilities supporting trail stock operations may be placed in wilderness only if they are necessary to carry out wilderness management objectives and provisions of the park's wilderness management plan. Facilities such as fire lookouts, radio antennas, and radio repeater sites may be placed in wilderness only if they constitutes the minimum facility required to carry out essential administrative functions and are specifically authorized by the regional director.

Permanent roads will not be built or retained in wilderness. Temporary vehicular access may be permitted only to meet the minimum requirements of emergency situations. Where abandoned roads have been included within wilderness, they will be used as trails or restored to natural conditions.

Unpaved trails and trail bridges may be provided where they are essential for resource protection or where significant safety hazards exist during the normal period of use.

No permanent heliports, helipads, or airstrips will be allowed in wilderness. Temporary landing facilities may be used to meet the minimum requirements of emergency situations. Site improvements determined to be essential for safety reasons during individual emergency situations may be authorized, but the site for authorized nonemergency aircraft landings, but no site markings or improvements of any kind may be installed to support nonemergency use.

The construction or reconstruction of shelters for public use generally will not be allowed, since wilderness users should be self-supporting in terms of shelter. An existing shelter may be maintained only if the facility is necessary to achieve wilderness management objectives or cultural resource protection objectives. The construction, use, and occupancy of cabins and other structures in wilderness areas in Alaska are governed by applicable provision of ANILCA and by NPS regulations in 36 CFR 13, and they may be permitted under conditions prescribed in the park's wilderness management plan.

Although the development of facilities to serve users will generally be avoided, campsites may be designated when essential for resource protection or enhancement of opportunities for solitude. In keeping with the terms of the park's wilderness management plan, campsite facilities may include a site marker, a fire ring, a tent site, a food-storage device, and a toilet, but only if determined by the superintendent to be the minimum facilities necessary for the health and safety of wilderness users or for the protection of wilderness resources and values. Toilets will be placed only in locations where their presence and use will resolve health and sanitation problems or prevent serious damage and where reducing or dispersing visitor use has failed to alleviate the problems or is impractical. Picnic tables will not be placed in wilderness.

(See Water Quality and Quantity 4:15, Planning and Proposal Formulation 5:4, Treatment of Cultural Resources 5:5, Backcountry Use 8:3, Emergency Preparedness and Emergency Operations 8:6, Aircraft Use 8:8, Access and Circulation Systems 9:7, Campgrounds 9:13, Comfort Stations 9:14)

Signs

Signs detract from the wilderness character of an area and make the imprint of man and management more noticeable. Only those signs necessary to protect wilderness resources or for

public safety, such as signs identifying trails and distances, will be permitted. Where signs are used, they should be compatible with their surroundings and be the minimum size possible.

(See Signs 9:11)

Research

The statutory purposes of wilderness include scientific and educational use, and the National Park Service will fully support the value of wilderness areas as natural outdoor laboratories. A research project may be conducted in wilderness if it meets all of the following requirements

- The research activities are otherwise allowable under federal laws and regulations.

- There is no alternative to conducting the research in a wilderness area.

- The project will not adversely affect physical or biological resources, ecosystem processes, or aesthetic values over an area or duration greater than necessary to meet research objectives.

- The project will not interfere with recreational, scenic, or conservation purposes of the wilderness over a broad area or long duration.

Hydrologic, hydrometeorologic, seismographic, and other research and monitoring devices may be installed and operated in wilderness only upon a finding that (1) the desired information is essential and cannot be obtained from a location outside of wilderness, and (2) the proposed device is the minimum tool necessary to accomplish the objective safely and successfully. Devices located in wilderness will be removed when determined to be no longer essential. All research activities and the installation, servicing, and monitoring of research devices will be accomplished in compliance with NPS wilderness management policies and procedures contained in the park's wilderness management plan. Non-NPS research activities that might disturb resources or visitors or require the waiver of any regulation may be allowed only pursuant to the terms and conditions of a permit.

(See Science and Research 4:2, Inventory and Monitoring 4:4, Weather and Climate 4:19, Research 5:2, Ethnographic Research and Inventories 5:12, Research and Collection Activities 8:15)

Fire Management

[Note: Fire management policies are under review by the Interagency Fire Management Policy Review Team and will be modified as necessary pursuant to their recommendations.]

Fire management activities conducted in wilderness areas will conform to the basic purposes of wilderness. The park's fire management and wilderness management plans together will identify the natural and historic roles of fire in the wilderness and will provide a prescription for response, if any, to natural and human-caused wildfires. If a prescribed fire program is implemented, these plans will also include

the prescriptions and procedures under which the program will be conducted.

Actions taken to suppress wildfires will use the minimum tool concept and will be conducted in such a way as to protect natural and cultural features and to minimize the lasting impacts of the suppression actions and the fires themselves. Information on developing a fire management program is contained in the *Fire Management Guideline* (NPS-18).

(See Fire Management 4:14, Fire Detection and Suppression 5:13)

Cultural Resources

Cultural features such as archeological sites, historic trails or routes, or structures that have been included within wilderness will be protected and maintained using methods that are consistent with the preservation of wilderness character and values and cultural resource protection requirements. Burial plots or commemorative features, such as plaques or memorials, that have been included in wilderness may be retained, but no new additions may be made unless authorized by federal statute, existing reservations, or retained rights. Native American religious areas and other ethnographic resources will be inventoried and protected. Native Americans will be permitted nonmotorized access within wilderness for sacred or religious purposes in accordance with criteria for special park uses.

(See Planning and Proposal Formulation 5:4, Treatment of Cultural Resources 5:5, Ethnographic Resources 5:11, Native American Use 8:8, Special Park Uses 8:10, Cemeteries and Burials 8:16, Commemorative Works and Plaques 9:17)

Use Of Wilderness

The National Park Service will encourage and facilitate those uses of wilderness that require the wilderness environment and do not degrade wilderness resources and character. NPS wilderness management actions will be directed toward providing opportunities for primitive and unconfined types of recreation by park visitors. Appropriate restrictions may be imposed on any authorized activity in the interest of preserving wilderness character and resources or to ensure public safety. Visitors will be encouraged and in some situations may be required through the regulatory process to comply with the concept of no-trace or minimum-impact wilderness use for both themselves and their livestock.

(See Management of Recreational Use 8:2)

General Public Use

Park visitors must accept wilderness largely on its own terms, without modem facilities provided for their comfort or convenience. Users must also accept certain risks, including possible dangers arising from wildlife, weather conditions, physical features, and other natural phenomena, that are inherent in

the various elements and conditions that comprise a wilderness experience and primitive methods of travel. The National Park Service will not eliminate or unreasonably control risks that are normally associated with wilderness, but it will strive to provide users with general information concerning possible risks, recommended precautions, minimum-impact use ethics, and applicable restrictions and regulations.

Wilderness users will be required to carry out all refuse as defined in 36 CFR 1.4.

As a general rule, public use of motorized equipment or any form of mechanical transport will be prohibited in wilderness. Operating a motor vehicle or possessing a bicycle in designated wilderness outside Alaska is prohibited by NPS regulations in 36 CFR 4. However, the Wilderness Act authorizes continuation of motorboat and aircraft use under certain circumstances where those activities were established prior to wilderness designation. The National Park Service will limit authorizations for the continued use of any motorized equipment in wilderness to situations where such use has been specifically authorized by Congress and determined by Congress or the Park Service to be compatible with the purpose, character, and resource values of the particular wilderness area involved. The use of motorized equipment by the public in wilderness areas in Alaska is governed by applicable provisions of ANILCA and NPS regulations in 36 CFR 13. The specific conditions under which motorized equipment may be used by the public will be outlined in each park's wilderness management plan.

The use of hand-propelled watercraft may be allowed in wilderness. However, the watercraft and all other supplies and equipment must be removed at the end of each wilderness trip.

Mobility-impaired persons may use wheelchairs (as defined in 36 CFR 1.4) in wilderness.

(See Accessibility for Disabled Persons 8:5, Accessibility for Disabled Persons 9:3)

Commercial Services

Wilderness-oriented commercial services that contribute to achieving public enjoyment of wilderness values or that provide opportunities for primitive and unconfined types of recreation may be authorized if they meet the "necessary and appropriate" tests of the Concessions Policy and Wilderness acts and if they are consistent with the wilderness management objectives contained in the park's wilderness management plan. Activities such as guide services for outfitted horseback, hiking, mountain climbing, or river trips and similar activities may be appropriate and may be authorized if conducted under terms and conditions outlined in the park's wilderness management plan and in documents authorizing concessions or commercial use. The only structures or facilities to support such commercial services that will be allowed in wilderness will be temporary shelters, such

as tents, which will be removed from the wilderness after each trip.

(See Commercial Services 8:3, Planning Criteria for Park Concessions 10:1, Commercial Use License 10:3, Rates Charged to Visitors 10:6, Interpretation 10:9)

Special Events

The National Park Service will not sponsor or issue permits for special events to be conducted in wilderness if those events might be inconsistent with wilderness resources and character.

(See Special Events 8:10)

Grazing and Livestock Driveways

Commercial grazing or driving of livestock in park wilderness will be allowed only when authorized by Congress. Where these activities are so authorized, they will be managed under conditions outlined in the wilderness management plan to protect wilderness resources and values. The use of motorized or mechanical equipment will not be allowed. The construction of facilities incompatible with wilderness values or management objectives will be prohibited.

Noncommercial grazing of trail stock incidental to recreational use of wilderness may be authorized in accordance with NPS regulations and conditions outlined in the wilderness management plan that ensure protection of wilderness resources and character. Superintendents will be responsible for monitoring livestock use of wilderness to the same degree as human use and may use the same management tools and techniques to manage livestock use that are available for managing other wilderness uses.

(See Grazing 8:14)

Rights-of-Way

Existing rights-of-way that have been included in wilderness should be phased out where practicable. Where it is not practicable, rights-of-way subject to NPS administrative control may be renewed under conditions outlined in the park's wilderness management plan that protect wilderness character and resources and limit the use of motorized or mechanical equipment. The National Park Service will not issue any new rights-of-way or widen or extend any existing rights-of-way in wilderness.

Rights-of-way and access procedures affecting wilderness areas in Alaska are governed by applicable provisions of ANILCA and regulations in 43 CFR 36 and 36 CFR 13.

(See Land Protection Plans 3:1, Rights-of-Way 8:11)

Mineral Development

The National Park Service will seek to eliminate valid mining claims and nonfederal mineral interests in wilderness through acquisition. In parks where Congress has authorized the

leasing of federal minerals, the Park Service will take appropriate actions to preclude the leasing of lands or minerals that are included within wilderness. Lands included within wilderness will be listed as excepted areas under applicable regulations in 43 CFR 3100 and 3500.

(See Land Protection Plans 3:1, Mineral Development 8:12)

Public Education

The National Park Service will develop and maintain an effective public education program designed to promote and perpetuate public awareness of and appreciation for wilderness character, resources, and ethics without stimulating an unacceptable demand for use. Efforts will focus on the fostering of an understanding of the concept of wilderness that includes respect for the resource, willingness to exercise self-restraint in demanding access to it, and an ability to adhere to appropriate, minimum-impact techniques when using it.

(See Interpretive Programs 7:1, Interpretive Services 7:2)

Appendix C

History of the Wilderness Recommendation at Grand Canyon

Wilderness Act Requirements

The passage of the 1964 Wilderness Act, Public Law 88-577, Section 3(c), instructed the Secretary of the Interior to review all roadless areas of at least 5,000 acres in the National Park System, and to submit a report regarding the suitability of these areas for wilderness classification. The Act provided a ten-year review period and timetable.

Grand Canyon National Park Wilderness Recommendations

In 1970, the National Park Service released for public review *its Preliminary Wilderness Study for Grand Canyon National Park, Marble Canyon National Monument, and Grand Canyon National Monument*. The study recommended phasing out motorized use on the Colorado River, and closing the network of fire roads on the North Rim to qualify these areas for wilderness. The total wilderness recommendation was 569,200 acres, or approximately 63% of the 900,000-acre Park. Absent from the study are any South Rim lands except the "Palisades of the Desert rim area" (U.S. Department of the Interior, National Park Service 1970).

In August of 1971, the Park issued a *Final Draft Wilderness Recommendation* of 508,500 acres, approximately 60,000 acres less than the earlier study (U.S. Department of the Interior, National Park Service 1971). Deleted from the recommendation were the North Rim and river corridor. The river corridor was excluded because of the planned continued use of motors on the river. The perceived requirement for fire roads, and projected use of mechanical equipment, resulted in the exclusion from wilderness consideration of North Rim lands until completion of a fire-hazard reduction program.

The November, 1971 Wilderness Recommendation reflected the August "Final Draft" acreage and rationale (U.S. Department of the Interior, National Park Service 1971a). Included within the recommendation was a rationalization for a 1/8-mile "management zone" between the Park boundary and the wilderness boundary.

In 1972, the Service released another Wilderness Recommendation consisting of 512,870 acres, due to environmental concerns. This action resulted in the "potential wilderness" addition of Grand Canyon National Monument and the North Rim, based upon projected elimination of grazing in the former, and elimination of fuel buildup in the latter. The 1/8-mile "management zones" were also eliminated as a result of public input (U.S. Department of the Interior, National Park Service 1972; Hardy and Associates 1971).

In 1973, the Park released its *Final Environmental Statement for the Proposed Wilderness Classification of 1972* (U.S. Department of the Interior, National Park Service 1973).

The passage of the *Grand Canyon National Park Enlargement Act* of 1975, Public Law 93-620, (amended PL 94-31), Section 11, required that the Secretary of the Interior submit within two years a new wilderness recommendation accommodating an enlarged Grand Canyon National Park.

The July 1976 *Preliminary Wilderness Proposal* called for 992,046 acres as suitable for wilderness. An additional 120,965 acres, including the river corridor, was recommended as potential wilderness (U.S. Department of the Interior, National Park Service 1976). The total proposal was 1,113,011 acres. A Draft Environmental Statement was also prepared in 1976 (U.S. Department of the Interior, National Park Service 1976a).

In August 1976, the Service conducted public wilderness hearings in Flagstaff, Grand Canyon, Phoenix, and St. George, Utah. A total of 509 letters and written statements resulted from the hearings and the document review process. The Park received comments from 23 Federal agencies, 17 State agencies, three Indian Tribes, 39 organizations, 24 companies, and 501 individuals (U.S. Department of the Interior, National Park Service 1980:14).

The *Final Wilderness Recommendation*, February 1977, signed by the Director, recommended 1,004,066 acres (including the river corridor, p.16, and most of the North Rim) for immediate wilderness designation with an additional 108,945 recommended as potential wilderness (U.S. Department of the Interior, National Park Service 1977). The total "recommended for immediate wilderness designation" and "recommended potential wilderness" acreage of both the 1976 and 1977 proposals was 1,113,011 acres. The NPS sent this recommendation to the Legislative Counsel in 1977, where it was held in abeyance pending completion of the River Management Plan (U.S. Department of the Interior, National Park Service 1977a: U.S. Department of the Interior 1979).

Upon completion of the 1980 *Colorado River Management Plan*, a memorandum from the Director of the National Park Service to the Assistant Secretary for Fish, Wildlife and Parks recommended 980,088 acres for immediate wilderness designation, and an additional 131,814 acres as "potential wilderness" (U.S. Department of the Interior, National Park Service 1980c). Attached was a revised 1977 recommendation that eliminated from wilderness consideration the 1,109-acre area between the Kaibab and the Bright Angel Trails (U.S. Department of the Interior, National Park Service 1980; May 1992). The river corridor was also recommended as potential wilderness until the planned phase-out of motors in 1985. The so-called *Hatch Amendment* to the 1981 *Department of the Interior Appropriations Bill* resulted in the abandonment of the 1980 *Colorado River Management Plan* and its wilderness emphasis.

A new river plan was written, and motor use on the river continued indefinitely (U.S. Department of the Interior, National Park Service 1981).

In 1993, the Park conducted an internal review and update of *the 1980 Wilderness Recommendation* (U.S. Department of the Interior, National Park Service 1993). Revisions were made, based upon the acquisition of mining, grazing, and other leases, the 1969 Field Solicitor's Opinion regarding the western boundary of the Navajo Reservation, and refinement in acreage determined by the Geographical Information System (GIS). All modifications were consistent with the letter or intent of the 1980 Recommendation. On August 3, 1993, the superintendent transmitted this recommendation to the Director of the National Park Service (U.S. Department of the Interior, National Park Service 1993a).

Appendix D

Minimum Requirement Decision Process for Grand Canyon National Park

The purpose of the minimum-requirement process is to determine the "minimum tool or administrative practice necessary to successfully and safely accomplish the management objective with the least adverse impact on wilderness character and resources." (*NPS Management Policies*, 6:4). In doing so, the following matrix provides Park staff and managers with a framework to guide the decision-making process while triggering consideration of specific variables which may affect wilderness values, resources, and experiences.

The following minimum-requirement matrix should be completed for administrative activities in the proposed wilderness. These activities include, but are not limited to, fire management, wildlife management, archaeological monitoring and treatments, research, and resource protection. The minimum-requirement decision process may be applied at a programmatic level but should describe specific activities. The minimum-requirement decision process may be applied at a programmatic level for proposed actions, but should describe specific activities.

Things to consider when completing the Grand Canyon National Park Minimum Requirement Matrix for actions in proposed wilderness:

Step 1

Is This An Emergency?

Emergency minimum-requirement standard operational procedures are defined in the Grand Canyon National Park Emergency Medical Service (EMS) Plan, the Grand Canyon National Park Search and Rescue (SAR) Plan, and the Grand Canyon National Park Fire Management Plan (See Chapter 11, Ecosystem Management).

If the action is not an emergency, continue with the process outlined below.

Step 2

Determine if the proposed action is essential to achieve planned wilderness objectives.

These objectives are presented in approved plans (e.g., Wilderness Management Plan, Colorado River Management Plan, General Management Plan, Resource Management Plan, Fire Management Plan, etc.). For this purpose, approved research is considered essential.

Step 3

Can the desired action be accomplished through visitor and staff education?

According to the Wilderness Act, wilderness is an area "which has outstanding opportunities for solitude or a primitive and unconfined type of recreation." The National Park Service will not eliminate or unreasonably control risks that are normally associated with wilderness; it will strive to provide users with general information concerning possible risks, recommended precautions, minimum-impact use ethics, and

applicable restrictions and regulations (*NPS Management Policies,* 6:8).

The emphasis of visitor contacts will be educational prior to embarking on a backcountry or river experience.[1] This will be accomplished through an expanded permitting process and other efforts including brochures, staff contact, displays, and pre-departure orientations (See Chapter 10, Interpretation, Education, and Information).

Leave No Trace (LNT)

LNT is a management and education program which promotes minimum-impact camping and hiking techniques in wildlands (See Chapter Ten). Wilderness travelers, both recreational and administrative, can greatly reduce their impacts by adhering to LNT principles.

Minimum-Impact Suppression Tactics (MIST) and Light Hand on the Land

These concepts are associated with low-impact fire suppression tactics and trail maintenance, and describe an appropriate wilderness work ethic (U.S. Department of Agriculture. National Forest Service. 1995). A light-hand approach is one in which the work is accomplished with the least necessary disturbance of wilderness resources, including visitor experience. The manager and field personnel must keep in mind that people working in wilderness often have a greater impact than the private visitor. Field crews must scrupulously adhere to minimum-impact camping (LNT) techniques.

Authority of the Resource

The Arthur Carhart National Wilderness Training Center teaches that agency—visitor contacts in wilderness should be conducted in a manner that respects visitor's expectations for a wilderness experience (Arthur Carhart National Wilderness Training Center 1993). Many violations are careless, unskilled, or uninformed actions which result in impacts on wilderness resources or other visitors' wilderness experience. When contacting visitors who exhibit undesirable behavior reference *Authority of the Resource*. This concept requires the manager and visitor to evaluate the consequence of their actions on an environment that both value. The agency representative should attempt to resolve the matter by following a three-step approach:

1) Give an objective description of the situation. Referencing the regulation or the visitor as violator is not required at this time.

2) Explain the implications of the action or situation that was observed. It is here that the agency representative attempts to reveal the authority of the resource or interpret what detrimental impacts will occur if the action is continued. This may include social impacts or reference to what will happen to other visitors' interaction with nature if the action continues.

3) Inform the visitor how the manager/ ranger (and the agency) feels about

[1] The most desirable times to contact the visitor or to make regulations known is during the anticipation/ planning phase of the wilderness experience. Researchers suggest the agency regulate at the entry level rather than the activity level within an area. (See Hendee, John C., et al. 1990:188-189; 401-422)

the action and what steps can or should be taken to improve the situation. The agency representative can then decide whether or not it is necessary to cite the regulation per se, and whether to escalate the level of law enforcement (Wallace 1990).

Wilderness rangers are guided by *NPS-9, Law Enforcement Guidelines* (U.S. Department of the Interior, National Park Service 1989a). The goals of NPS-9, which include visitor and staff safety, park resource protection, and the enhancement of visitor enjoyment, are achieved through the application of the lowest level of enforcement technique necessary to gain compliance.

Step 4

Decide if the action can be accommodated outside wilderness.

If possible, locate activities or facilities determined "essential" (e.g., visitor orientation, information signs or a radio-repeater station) outside wilderness.

Step 5

List alternatives appropriate for wilderness management.

For the Minimum-Requirement Process to work, it is important to develop and seriously consider a range of realistic alternatives. This process involves a tiered analysis beginning with the least obtrusive, nonmechanized alternative.

Primitive Skills

Primitive skills involve the proficient use of tools and skills of the pre-motorized or pioneering era (e.g., the double-bit axe, the crosscut saw, the pack string, and oar-powered and paddle-powered watercraft). The working understanding of primitive skills is important to appropriately plan for their use. Managers must take the lead in demonstrating that tasks can be performed well by primitive or traditional, nonmotorized methods. Field staff require adequate training in primitive-tool selection, use, and care to efficiently accomplish planned work. While agency staff should constantly stress the importance of using primitive skills in accomplishing management objectives, they should understand that minimum-requirement analysis will not always lead to the use of a primitive tool.

Mechanized Use in Wilderness

The use of motorized equipment is prohibited when other reasonable alternatives are available to protect wilderness values. While Congress mandated a ban on motors and mechanized equipment, it also recognized that managers may occasionally need those sorts of tools. While this provision complicates the decision-making process, it remains an *exception* to be exercised very sparingly and only when it meets the test of being the *minimum necessary* for *wilderness purposes* (Worf 1987; Colorado State University 1991). Administrative use of motorized equipment or mechanical transport, including motorboats and aircraft, may

[2] "Routine" is defined as "a regular, more or less unvarying procedure, customary, prescribed, or habitual, as of business or daily life."

be authorized only if determined by the superintendent to be the minimum tool needed to protect wilderness values. Such management activities will be conducted in accordance with all applicable regulations, polices, and guidelines and, where practicable, will be scheduled to avoid creating adverse resource impacts or conflicts with visitor use (*NPS Management Policies,* 6:4-5).

Routine[2] nonemergency restoration, visitor contact, monitoring, and maintenance in proposed wilderness should consist of nonmechanized tools. Nonroutine (preferably one-time) use of motorized equipment such as pionjars, chain saws, etc., during extensive trail reconstruction, stabilization, and relocation may be permitted on a case-by-case determination by the superintendent.[3] Nonroutine helicopter support may be authorized if nonmechanized transport is deemed unreasonable or hazardous. If some compromise of wilderness resources or character is unavoidable, only those actions that have localized, short-term adverse impacts will be acceptable (*NPS Management Policies*, 6:4).

Step 6

Evaluate the alternatives to determine which has the least impact on wilderness resources. Can the desired action be accomplished safely and effectively with primitive skills?

The manager must determine how to safely accomplish the action with the least impact on the wilderness resource and visitor experience. Remember that potential disruption of wilderness character and resources and applicable safety concerns will be considered before, and given significantly more weight than, economic efficiency.

The net result of a minimum-requirement analysis is a carefully weighed project or action found to be the most effective way of meeting wilderness objectives and the *minimum necessary* for Wilderness Act purposes.

Step 7

Select the appropriate minimum tool or action.

Obtain review from the Division Chief and Wilderness Coordinator, and approval from the superintendent. Coordinate the preparation of a project proposal with the Park environmental compliance officer unless the proposed action has been addressed at the programmatic level.

[3] The "reoccurring" need for mechanized equipment, such as chainsaws or mechanized transport, may be necessary to accomplish fire management objectives on the existing temporary fire roads until the natural fire regime is restored. At that time, the roads will be restored to a natural condition, or converted into trails as specified by Management Policies, Chapter 6:5. This issue will be addressed in the revision of the *Grand Canyon National Park Fire Management Plan*.

Note

The following individuals provided comment on this document:

- Judy Alderson*
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  NPS Alaska System Support Office
- Jim Walters*
  Wilderness Coordinator
  NPS Intermountain Field Area
- Bill Briggle*
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  Mt. Rainier National Park
- Karen Wade*
  Superintendent
  Great Smoky Mountains National Park
- Uwe Nehring*
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  Crater Lake National Park
- Doug Morris*
  Superintendent
  Saquaro National Monument
- Dan Oltrogge
  Fire Management Officer
  Grand Canyon National Park

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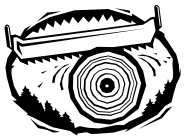
Process for Determining Minimum Requirement

Grand Canyon National Park



Proposed Action: _____

To be undertaken by: _____

1 IS THIS AN EMERGENCY?

YES → Act according to approved emergency minimum-tool SOPs

NO ↓

2 IS ACTION ESSENTIAL? (to meet planned wilderness objectives[1])

YES ↓

NO → Don't Do It

3 Can this action be accomplished through visitor education?

YES → Do it

NO ↓

4 Can Action Be Accomplished Elsewhere? (Outside of Wilderness area)

YES → Do It There

NO ↓

Go to Page two

•List the Objective(s) met by this action:

[1]Management objectives are listed in approved plans, for example:
- *Wilderness Management Plan*
- *Colorado River Management Plan*
- *Fire Management Plan*
- *General Management Plan*
- *Management Policies*
- *Strategic Plan for GCNP*
- *Resource Management Plan*
- *Approved Research*

•Other (non-wilderness) areas considered:

Process for Determining Minimum Requirement

5 List alternative ways to accomplish this action.

•List alternatives:

6 Evaluate which alternative would have the Least Impact on:
- Wilderness resources?
- Visitor experience?

Can this action be safely and effectively accomplished with primitive skills? (Economic efficiency and convenience are not primary considerations)

YES

7 **Select Appropriate Primitive Tools and Skills**

NO

7 **Select Appropriate Mechanized Tool** (non-routine[2] uses only) or Administrative/Research Facility

Considerations:

•What is the best group size to complete this action with the least impact on resources and visitor experience?

•What is the best time of year to complete action while minimizing impact on resources and visitor experience?

•If mechanized equipment is selected, how often will it be used, and how long will the project last?

•If this action cannot be accomplished through visitor education alone, how can it contribute to the accomplishment/enhancement of this action?

GO TO PAGE THREE

[2]Routine is defined as: "A regular, more or less unvarying procedure, customary, prescribed, or habitual, as of business or daily life."

Givens:
•We will manage for wilderness.
•River is included
•Economics and convenience are secondary

Process for Determining Minimum Requirement

Action: _____

List selected alternative and justification here:

Prepared by | Date | Reviewed by Division Chief | Date

Reviewed by Wilderness Coordinator

Approved by Superintendent, Grand Canyon National Park | Form Approved 1998, GRCA

Appendix E

Recreational Opportunities and Permit Information for Adjacent Lands

Navajo Tribal Lands

There are a number of trails and routes on Navajo land used by Grand Canyon hikers: Lees Ferry to the confluence with the Little Colorado River; and the Little Colorado River Gorge from Cameron to the confluence of the Colorado River. Permits are required from the Tribe for backcountry use and camping on Navajo Nation lands.

Permits and information may be obtained at three locations throughout the year:

Navajo Nation Parks and Recreation Department
P.O. Box 9000
Window Rock, AZ 86515
(520) 871-6647

Cameron Visitor Center (at junction of Hwy 89 and Hwy 64)
P.O. Box 549
Cameron, AZ 86020
(520) 679-2303

LeChee Sub-Office
Located near LeChee Chapter House, seven miles south of Page, Arizona
(520) 698-3360

Navajo Nation fishing and hunting permits, fees, and dates can be obtained by contacting:

Fish and Wildlife Department
P.O. Box 1480
Window Rock, AZ 86515
(520) 871-5338

Havasupai Tribal Lands

A one-time entrance fee is charged by the Tribe for use of Havasupai lands. The main trail into Supai village is located at Hualapai Hilltop. Nightly camping fees for the campground are required. The campground is located two miles from the village between Havasu Falls and Mooney Falls. Backcountry use of Great Thumb areas requires a permit from the Havasupai Tribe as well as the Grand Canyon National Park.

Havasupai entrance and camping fees differ for the high-use season (April 1 through October 31) and the off-season (November 1 through March 31).

For information and campground reservations, contact

Havasupai Tourist Enterprise
General Delivery
Supai, AZ 86435
(520) 448-2141

Hualapai Tribal Lands

The primary access to the Colorado River in the western part of Grand Canyon is by the Diamond Creek Road. Hualapai permits and fees are required for private boat launching or take-out, camping, and sight-seeing. Commercial whitewater rafting trips may also be scheduled through Hualapai River Runners. Hunting permits are also available through the Department of Natural Resources.

For information on various recreational activites on Hualapai Tribal lands, contact

Hualapai Enterprises, Inc.
P.O. Box 359
Peach Springs, AZ 86434
(520) 769-2419

Bureau Of Land Management

Arizona Strip District

A variety of wilderness and nonwilderness recreational activities are available on public lands to the north and northwest of Grand Canyon National Park near the Utah border. Many of the public lands on the "Arizona Strip" are administered by the Bureau of Land Management (BLM).

Primitive roads on BLM lands provide access to Fort Garrett Point and Whitmore Point, two scenic overlooks in western Grand Canyon.

Permit fees are required for day-use and overnight camping in the Paria Canyon, Buckskin Gulch, and Coyote Buttes portions of the Paria Canyon—Vermilion Cliffs Wilderness Area. Visitors to the area can deposit fees at self-serve stations located at White House, Buckskin, and Wire Pass Trailheads.

Information on the various BLM recreational opportunities on the Arizona Strip may be obtained by contacting

Interagency Office and
Information Center
345 East Riverside Drive
St. George, UT 84790
(801) 688-3200

U.S. Forest Service (USFS)

Kaibab National Forest

The north and south boundaries of Grand Canyon National Park are shared with the Kaibab National Forest. The Tusayan District is located near the South Rim, and the North Kaibab District is located north of the Park. The Saddle Mountain and Kanab Creek Wilderness Areas are located in the North Kaibab District.

Primitive roads in the North Kaibab District provide access to several Grand Canyon scenic overlooks including Indian Hollow, Monument Point, Crazy Jug Point, Timp Point, and Marble View.

USFS permits are not required for backcountry use. Reservations and fees are required for overnight campground use on Forest Service areas.

Information may be obtained by contacting:

For areas adjacent to South Rim

Kaibab National Forest
Recreation and Visitor Information
200 W. Railroad Ave.
Williams, AZ 86046
(520) 635-4061

For areas adjacent to North Rim

North Kaibab Ranger District
P.O. Box 248
Fredonia, AZ 86022
(520) 643-7395

Kaibab Plateau Visitor Information
Center at Jacob Lake
May through October
(520) 643-7298

National Park Service

Glen Canyon National Park
Lake Mead National Park

Water-based recreation such as motor boating, water skiing, sailboarding, and fishing are found on the reservoirs at Lake Powell, which is managed by Glen Canyon National Recreation Area, and at Lake Mead, which is managed by Lake Mead National Recreation Area.

Access to Grand Canyon scenic overlooks at Whitmore Wash and Twin Point is through primitive roads in Lake Mead National Recreation Area.

For information, contact

Glen Canyon National Recreation Area
P.O. Box 1507
Page, AZ 86040-1507
(520) 608-6404
Lake Mead National Recreation Area
601 Nevada Highway
Boulder City, NV 89005
(702) 293-8990

Appendix F

Wilderness Use by Persons with Disabilities

(1) In General—Congress reaffirms that nothing in the Wilderness Act is to be construed as prohibiting the use of a wheelchair in a wilderness area by an individual whose disability requires use of a wheelchair, and consistent with the Wilderness Act, no agency is required to provide any form of special treatment or accommodation, or to construct any facilities or modify any conditions of lands within a wilderness area to facilitate such use.

(2) Definition — For the purposes of paragraph (1), the term wheelchair means a device designed solely for the use by a mobility-impaired person for locomotion that is suitable for use in an indoor pedestrian area. (Section 507(c), 104 Stat. 327, 42 USC. 12207, Americans with Disabilities Act of 1990 [ADA])

All requests involving wilderness use by persons with disabilities shall be in accordance with the Architectural Barriers Act, the Rehabilitation Act of 1973 (amended in 1978), Section 507(c) of the Americans with Disabilities Act of 1990 and be reviewed to ensure that wilderness resources and character are not damaged or diminished.

The NPS is not required to provide any modification or special treatment to accommodate accessibility by persons with disabilities. However, managers should explore solutions for reasonable accommodations when not in conflict with the Wilderness Act (e.g. barrier-free trails, accessible campsites).

Wheelchairs are appropriate in Wilderness only if they meet the ADA definition. The intent of this definition was that a wheelchair is a person's primary mode of locomotion, manual or electric, but not an all terrain vehicle. This definition was also intended to ensure that persons using wheelchairs were reasonably accommodated in wilderness without the need to compromise the resource and character of wilderness.

Service animals are permitted in wilderness. Service animals are not to be confused with "pets." The ADA defines a service animal as "any guide dog, signal dog, or other animal individually trained to provide assistance to a person with a disability. They are required by persons with disabilities in day-to-day activities."

A publication entitled Wilderness Access Decision Tool (available through the Arthur Carhart National Wilderness Training Center) has been developed and should be followed to make appropriate, objective, and consistent decisions regarding the use of wilderness areas by persons with disabilities. Any decision should insure that it does not inadvertently discriminate against persons with disabilities (U.S. Department of the Interior, National Park Service.1997d).

Appendix G

Backcountry Reservation and Permit System

The demand for permits for over night use from March through October far exceeds the use limits that protect wilderness resources and the quality of recreational experiences. An automated reservation system ensures a fair and equitable distribution of opportunities for recreation in the Park's wilderness areas. "Backcountry" is defined as all areas outside the developed areas (i.e., rims, Cross-Canyon Corridor, and Proposed Wilderness); "wilderness" refers to the Proposed Wilderness areas only.

Backcountry Permits Information

Permits are required for all backcountry and wilderness overnight use, and must be in possession at all times. Maximum group size is 11 people.

Advance permit requests are accepted up to four months prior to the trip start date.

By Mail
Backcountry Office
Grand Canyon National Park
P.O. Box 129
Grand Canyon, AZ 86023

By FAX
(520) 638-2125

Information Telephone
(520) 638-7875
1:00 p.m. to 5:00 p.m. daily
Reservations are not accepted by phone.

In-Person
The South Rim Backcountry Office at the Maswik Transportation Center
Hours: 8 a.m. to noon; 1 p.m. to 5 p.m.

The North Rim Backcountry Office in the North Rim Administrative Area
Hours: 8 a.m. to noon; 1 p.m. to 5 p.m.

Requirements

A Backcountry Use Permit is required for all overnight use in wilderness and backcountry areas. Phantom Ranch Lodge guests do not need a backcountry use permit.

Backcountry permits are not required for private day hikes or day rides; however, day users must observe wilderness and backcountry regulations. Incidental Business Permits (IBP) are required for all commercially guided day hikes, including those accompanying a motor-vehicle tour or other Park use. (See Appendix I, Commercial Use Policy).

Permits are valid only for the trip leader, number of people, itinerary, and dates specified on the permit. Backcountry and wilderness travelers must have their permit in their possession and in plain view while hiking or camping so it can be easily checked by rangers.

Obtaining Permits

The demand for a Grand Canyon backcountry permit far exceeds availability, resulting in a highly competitive process. Obtaining a permit in advance is strongly recommended. There are no guarantees that there will be any last

minute walk-in permits available. The demand for permits is greatest for use between March and early November, and all holiday periods. November through February is considered a low-use period.

Permit requests for overnight backcountry and wilderness use are accepted only by mail, in person, or by FAX (520-638-2125), and are issued on a first-come, first-served basis. Fees should be paid at this time by credit card, check, or money order.

A written response will be sent via U.S. Mail to all mail-request and FAX applicants with the request's results.

For in-person requests, the South Rim Backcountry Office, located at the Maswik Transportation Center, is open from 8:00 a.m. to 12:00 noon and 1:00 p.m. to 5:00 p.m. daily. The North Rim Backcountry Office is open daily mid-May through October only (weather permitting) during the same hours. Note: Grand Canyon is on Mountain Standard Time all year, and does not participate in Daylight Savings Time.

Permit Fees

In 1996, Congress mandated the Secretary of the Interior to implement a three-year Recreation Fee Demonstration Program in up to 100 national park areas. This program directs parks to increase current fees and establish new fees for recreational uses, and retains a large portion of the resulting revenues at the collecting park for new services and facilities. Grand Canyon National Park is participating in the Recreation Fee Demonstration Program, which increased entrance fees and created a backcountry permit/impact fee. The benefits realized at Grand Canyon will be additional service to the public, increased protection of Park resources, and construction of needed facilities according to the Park's General Management Plan.

All fees paid to the Backcountry Office are nonrefundable. Current fees include a $20 Basic Permit Fee plus a $4 per-person, per-night Impact Fee. Frequent users may wish to purchase a one-year Frequent Hiker membership for $50. This membership will waive the initial $20 fee for each permit obtained by the member trip leader (who must be on the trip). This membership is valid for twelve months from the date of purchase.

Advance Permit Requests

Beginning with the first day of a month, permit requests will be accepted for a proposed trip starting on any date in that month or the following four months.

Apply On Or After	For Dates Through
January 1	May
February 1	June
March 1	July
April 1	August
May 1	September
June 1	October
July 1	November
August 1	December
September 1	January
October 1	February
November 1	March
December 1	April

For example: Beginning on December 1, 1998, any start date through April 30, 1999, would be available for request.

A permit request that starts in an open month and ends in a closed month, but is seven days or fewer in duration, will be processed as a valid request. Trips extending beyond that guideline into the closed month will require an additional permit request for the closed month once that month becomes available.

Mail or FAX Request Procedures

Permit requests sent by mail or FAX will be accepted if mailed or FAXed on or after the appropriate date as specified above. The envelope postmark or FAX machine received date will be used to determine if the request is valid. Requests postmarked or FAXed earlier than the specified date will be returned without processing.

If available, a Backcountry Use Permit will be issued and mailed to the trip leader. The permit will be valid only for the trip leader named on the permit. If a permit has been requested and not received prior to trip departure, contact the Backcountry Office. A valid permit must be in possession before a trip begins.

Each mail-in or FAX permit request must specify the following:

- Name, address, and phone number of the trip leader
- Credit card number, expiration date, signature and date, amount authorized
- Name of organization (if applicable)
- The number of people and livestock (if applicable)
- Proposed night-by-night itinerary showing use-area codes, and dates for each night of the proposed trip
- State and license plate numbers of vehicles that will be parked at a trailhead (if applicable)
- Alternate proposed itineraries in case the first itinerary is not available

Permits will not be issued unless complete information is provided. The listing of at least three alternate itineraries with this information is strongly recommended.

Phone Information

Backcountry Office staff answer questions between 1 p.m. and 5 p.m. Monday through Friday (except on Federal holidays) at (520)638-7875. Permit requests are not accepted by phone.

The Backcountry Office does not make reservations for campground space on the rims, for river trips, mule trips, Phantom Ranch lodging, or trips into the Canyon on the Havasupai Indian Reservation.

Other Locations

Reservations and/or permits may sometimes be obtained from rangers on duty at the Tuweep, Meadview, and Lees Ferry Ranger Stations. However, these rangers have other patrol respon-

sibilities and may not be available to provide assistance. Consequently, it is recommended that trips be planned in advance through the Backcountry Office to be certain permits are available. Grand Canyon permits may also be available on a limited basis at Pipe Spring National Monument; the Bureau of Land Management offices in St. George and Kanab, Utah; and at the U.S. Forest Service offices in Fredonia, Arizona.

Organized Groups

An organization is any number of persons united for some purpose, whether commercial or noncommercial.

No more than eight small groups or four large groups (not to exceed 48 persons) from the same organization may camp below the rim on the same night. Only one large group of 11 maximum or one small group of six maximum from the same organization are allowed in the same campground or use area on the same night. A small group is defined as six people or less on a permit. A large group is defined as 7-11 people on a permit. Maximum group size is 11 people.

Groups of more than 11 must divide between different campgrounds or use areas. Only one group per night will be allowed in use areas in the Wild Opportunity Class. Only a small percent of permits are issued to large groups. A group size to six or less improves the chance of obtaining a permit.

Wilderness Private Stock Use

Permit application procedures for wilderness stock users are the same as those described for backpackers, except that stock users need to include the number of stock as well as the number of people in their permit application. For wilderness use areas, the limit is six animals and six people with no more than five animals to one mounted packer.

Grazing is not permitted. Stock handlers must bring enough feed for the trip's duration. Any feed packed into the backcountry or wilderness must be sterile to protect the Park from the introduction of nonnative plants and noxious weeds. For more information on private stock use, see Appendix H, Wilderness Stock Use Guidelines. An information sheet on stock use in the Cross-Canyon Corridor is available on request from the Grand Canyon Backcountry Office.

Last-Minute Permits

Persons without advance reservations may be able to obtain a Backcountry Use Permit by placing their name on the waiting list for cancellations. This must be done in person at the Backcountry Office on the South Rim (or North Rim, when open).

North Rim Winter Use

During the winter season (approximately late October through mid-May), a Backcountry Permit is required for

overnight use of the North Rim from the Park's northern boundary to Bright Angel Point on the Canyon rim. Winter access is by hiking, snowshoeing, or Nordic skiing.

Permittees are allowed to camp at-large between the Park's north boundary and the Widforss Road junction, but not at the North Kaibab Trailhead. Between the Widforss Road junction and the Bright Angel Point area, camping is permitted only at the North Rim Campground group campsite.

Human waste should be deposited at the base of a tree well away from any road or developed area where it will not be encountered by a summer visitor after the snow has melted. During the winter months, burning toilet paper is acceptable if the area is snow covered.

Appendix H

Wilderness Stock Use Guidelines

Current recreational stock day use within the proposed wilderness is essentially unknown but believed to exist at relatively low levels. Recreational stock use is permitted where, 1) impacts to resources lie within acceptable levels (See Figure 3.2), and 2) the potential conflict with other established wilderness users is minimal.

Stock Use Guidelines

Proposed Wilderness

In the proposed wilderness, stock are permitted on following designated trails

Cape Solitude
Fort Garrett
Brady Hollow
Kanab Plateau
Tiyo Point
Uncle Jim
Whitmore
Cove

Nonwilderness Areas

Additional riding opportunities are available on the following nonwilderness trails and roads

South Bass Trailhead Road
Havasupai Point Road
North Bass Trailhead Road
Point Sublime Road
Arizona Trail
Cross-Canyon Corridor

An information sheet on private stock use in the Cross-Canyon Corridor is available from the Grand Canyon National Park Backcountry Office.

Recreational stock use is permitted in the areas mentioned above provided the following environmental-protection requirements are met (see Cole, Peterson, and Lucas 1987; and Cole 1989, 1990)

A Backcountry Permit is required for overnight private livestock trips. Permit availability is determined by use-area limits.

- Total numbers for wilderness overnight parties will not exceed the small group size of six stock and six people (with a limit of five stock to one mounted packer)

- Total numbers for wilderness day users will not exceed twelve stock and 12 people

- When taking a break, stock should be moved off trail far enough so that other parties can pass safely and unnoticed. Select a durable site for the break, tying stock in a place and manner that will not cause avoidable impacts. Do not tie directly to trees and other vegetation. Keep stock well away from destination overlooks.

- Stock must stay on established trails or primitive roads. Pack stock should be tied together and led single file, not turned loose and herded. Animals are not allowed to spread out or walk on parallel or developing trails.

- Grazing is not permitted. Stock parties must carry adequate feed free of exotic weeds. Feed and salt will be placed on a tarp or in a feedbag.

• All stock should be contained outside camping or overlook areas.

• Stock should be tied to existing hitch rails where provided. Where not provided, the use of trees and a hitch line with wide nylon "tree saver" straps is recommended. These straps come with a quick-adjusting buckle for convenience while a rope is tied to the straps and not directly to vegetation. A resistant site of hard, rocky ground is usually best. It is suggested that two or more horses be tied together to reduce the tendency to paw the ground. Animals inclined to paw should be hobbled.

• Stock parties will renovate any pawed area, pack-out excess feed and salt, and scatter manure before leaving camp.

The Basis of the Stock Use Guidelines

Trails

Stock typically have more impact on wilderness ecosystems than an equal number of hikers, especially on fragile sites (Hendee, et al. 1990; Hammitt and Cole 1987; Whittaker 1978). Horse trails and campsites have been shown to be ten times as impacted as sites used by only backpackers (Hammit and Cole). Since horses, mules, and other types of recreational stock are heavier than humans and weight is concentrated on a smaller surface area, stock exerts much more pressure on the ground. Effects due to greater concentrated weight contribute to substantial gouging and ripping of ground, and the potential for causing impacts is much more pronounced than with human traffic (Hammit and Cole 1987). Problems resulting from this high potential for trampling disturbance are compounded by the tendency for shod hooves to loosen the soil making it more susceptible to erosion. As a result, stock trails are more prone to erosion and more likely to require extensive supplemental maintenance (Hammit and Cole 1987; McQuaid-Cook 1978; Weaver and Dale 1978). This is of particular concern at Grand Canyon where inner canyon trails are generally steep.

Research and experience indicate that creation of multiple trails and new trails will occur much more rapidly with stock use than with hiker use (Cole 1990; Weaver and Dale 1978; Nagy and Scotter 1974). The trails created will also be wider, deeper, more compacted, and less vegetated (Weaver and Dale 1978; Cole 1989). Widening, for example, results from horse use on side hills. Horses tend to walk on the downhill side of the trail, which breaks down this outer edge and widens the trail (Hammit and Cole 1987).

Campsites

An campsites, differences in the magnitude of impact caused by hikers as opposed to stock parties are even more pronounced than on trails. The action of shod hooves causes rapid site deterioration through loss of organic soil horizons, increased compaction, and decreased infiltration rates (Cole 1990). Research indicates

and experience demonstrates that campsites used by stock parties result in significantly larger barren core areas as sites used primarily by backpackers (Cole 1990). Damage to vegetation and soil, as well as the accumulation of manure and urine, result in severe ecological and aesthetic damage to campsites (Cole 1989). In addition, seeds of exotic plants contained in horsefeed readily geminate and grow on such disturbed sites (Cole 1990).

Stock parties disturb a larger area because of the need for an adjacent area to accommodate stock (Cole 1990). Horses and mules, particularly when overnight use is involved, require additional space at campsite locations and lead to impacts beyond the specific campsite boundaries (Hammit and Cole 1987).

In areas where stock are grazed or confined for the night, impacts result from both trampling and defoliation of plants. These impacts are unique to stock parties and often affect a much larger area than all other recreational impacts combined (Cole 1990).

Visitor Conflicts

Although few stock users consider meeting hikers as inherently unpleasant, hikers generally find it undesirable to meet stock in wilderness (Watson, Niccolucci, and Williams 1994). For many wilderness users, meeting parties with stock or finding evidence of stock use, such as manure or corrals, also detracts greatly from their experience. This is particularly true in the majority of wildernesses where stock use is a small minority, such as in Grand Canyon (Cole, 1990).

The underlying ecological arguments currently framing the livestock-hiker debate are set in cultural traditions and symbols that fuel the emotions on each side (Moore and McClaran 1991). While the ultimate resolution of these issues lies beyond the scope of this document, Park management recognizes the inescapable conclusion that social, environmental, and administrative costs associated with stock use are much more pronounced than those associated with comparable amounts of hiker use (Cole, 1990). This situation is exacerbated by the large number of backpackers who feel that use of stock and its impacts are inappropriate. Park management also recognizes that adequate areas have been provided for stock use.

Appendix I

Commercial Use Policy

Goal

The goal of commercial use management in wilderness and backcountry areas is to provide quality services for guided hikes, winter use, equipment rental, and other services which have been determined by the National Park Service to be necessary and appropriate and enhance visitor enjoyment consistent with NPS wilderness policy.

The NPS strives to interpret regulations consistently regarding organizational status (i.e., commercial versus educational). Commercial organizations, as defined in 36 CFR 5.3, must be responsive to commercial authorization requirements. Educational organizations, as defined in 36 CFR 71.13(d), are exempt from securing commercial authorizations and paying certain fees.

Some organizations have declared themselves to be nonprofit, and do not pay taxes but, in fact, they are businesses providing services with a paid staff in return for payment by their clients. These organizations fall under the purview of 36 CFR 5.3 and the Concessions Management Program (NPS-48). They are properly authorized via Incidental Business Permits (IBP).

Organizations providing "field trips" are not viewed as educational institutions in the same sense as elementary, junior, and senior high schools, colleges, and universities whether public or private. These "field trip" organizations must secure commercial authorizations and pay applicable entrance and user fees.

Definitions

Commercial

Any or all goods, services, agreements, or anything offered to park visitors and/or the general public for recreational purposes, which uses park resources, or is undertaken for or results in compensation, monetary gain, benefits or profit to an individual, organization, or corporation, whether or not such entity is organized for purposes recognized as nonprofit under local, State, or Federal law.

Verifiable Clients

Trip participants whom the commercial operator can identify by name, address, and telephone number are verifiable clients. When required, verifiable client information is submitted at the time a reservation is made through the Backcountry Office.

Noncommercial

All nonprivate trips not covered under the commercial definition are considered noncommercial trips (including trips conducted by the organizations or organization types listed below). Organizations not listed below may submit their qualifications for consideration of noncommercial status to the superintendent for review.

Specific Noncommercial Groups

- Girl Scouts of America
- Boy Scouts of America
- Campfire Girls
- 4-H Clubs of America

Other Noncommercial Group Types

- Bona fide educational institutions when academic credit is given to enrollees for the in-park activity
- Certain governmental entities (e.g., city, county, or State recreation districts, etc.)
- Certain civic organizations (e.g., Helping Hands, Big Brothers/Sisters, etc.)
- Religious organizations (when participants are official members of record of the religious organization)

Procedures

Noncommercial Use Authorizations

Noncommercial organizations are permitted to make backcountry reservations in advance without a verifiable list of participants. However, in order to assure an equitable use of the system, all noncommercial organizations must confirm their reservations no later than 30 days prior to their trip start. Unconfirmed reservations will be cancelled and made available to the general public.

Any single noncommercial entity (e.g., Boy Scout Troop #30 of Grand Canyon, Arizona) will be permitted to make no more than two (2) advance backcountry reservations in any given calendar year except when a verifiable list of participants (names, addresses and telephone numbers) is provided for the additional reservations. There is no reservation limit for noncommercial organizations making reservations for hikes when they have a verifiable participant list.

Overnight Commercial Use Authorizations

An appropriate commercial authorization will be required for all overnight backcountry or wilderness commercial use. The authorization will be initiated by request through the Backcountry Office, and upon receipt of a commercial group's reservation request, will be prepared by the Concessions Office, and approved or disapproved by the superintendent.

All applicants for Incidental Business Permits (IBP) will be required to meet the following minimum qualifications and conditions prior to issuance of a permit.

- Proof of liability insurance coverage (Certificate of Insurance) naming the United States Government as an additional insured. Minimum acceptable level of insurance is $300,000 per occurrence and $500,000 aggregate, if the policy specifies aggregate limits.

- Payment of all required fees. A nonrefundable $200 fee is charged for application and administration of the IBP, irrespective of the IBP's length. Entrance fees and overnight use fees are also required.

- Certification that all guides/leaders meet the following qualifications
  - •Must be 18 years of age or older
  - •Must hold a current Advanced

First Aid, First Responder, or higher, Emergency Medical Services (EMS) certification.

- All IBP holders must assume rescue expenses incurred by any member of their group.

- The National Park Service reserves the right to establish commercial use-night limitations for the time periods and/or Use Areas as future conditions may warrant. Commercial use in the Cross-Canyon Corridor and wilderness areas, including North Rim winter use, are not limited at this time except as follows:

    - Incidental Business Permits will not be issued to authorize activities granted to existing concessioners under the terms of current concession contracts.

    - An exception to the limitations and restrictions on overnight Corridor use may be made for commercially guided special populations groups (physically or otherwise handicapped). Commercial use for Corridor trips for these groups may be granted by the superintendent on a need basis, after careful review of each request individually on its own merits.

- Commercial operators will be issued a date-specific IBP covering one or more trips occurring within the same reservation window as defined by the Backcountry Reservation and Permit System (Appendix G). A separate IBP is required for each reservation period, and commercial operators must compete for permits on the same basis as noncommercial and private groups. No special consideration or exceptions to reservation policies, campground and/or Use Area limits, etc., will be granted. All commercial operators may have equal access to the backcountry reservation system in order to book verifiable client reservations. Verifiable clients are trip participants whom the commercial operator can identify by name, address and telephone number.

Commercial operators who have received proper authorization and have verifiable clients may offer guided hikes in all backcountry areas where visitation is allowed on a first-come, first-served basis according to the requirements specified herein.

Day-use Commercial Use Authorizations

Commercially guided day hikes below the rim are authorized under the Incident Business Permit (IBP) program. IBPs are mandatory for conducting commercial trips in the Park; their issuance is a courtesy not an entitlement. Requests for day-hike IBPs are handled through the Division of Concessions Management. Commercial services are not authorized until the IBP is final. Prospective permittees should allow two to four weeks for permit processing, and should not schedule any commercial trips to the Park prior to obtaining a fully executed IBP.

All applicants for an IBP will be required to meet the following requirements prior to issuance of an IBP:

- Proof of liability insurance coverage (Certificate of Insurance) naming the United States Government as an additional insured. Minimum acceptable level of insurance is $300,000 per occurrence.

- Payment of all required fees. A nonrefundable $200 fee is charged for application and administration of the IBP, irrespective of the IBP's length. Entrance fees as required at the Entrance Stations will be paid by the permittee.

- Certification that all guides/leaders meet the following qualifications
    - •Must be 18 years of age or older.
    - •Must hold a valid Emergency Responder, Wilderness Advanced First Aid, or higher, Emergency Medical Services (EMS) certification.

The permittee must ensure that staff have the expertise to operate all services authorized under the IBP. The permittee must furnish the Park with a list that identifies staff members and their qualifications. A staff registration form must be submitted prior to working in the Park.

The maximum size for a commercially guided day hike is 16, including guides in the Corridor Use Area. In wilderness, group size is limited to 11 (two guides for nine clients).

Commercial day hiking will be on established trails only. Permit holders are required to submit a trip form prior to each trip which identifies the specific trails to be hiked. Rim-to-river-to-rim hikes are prohibited. Commercial day hikes must not be advertised as athletic achievements. The permittee is responsible for organizing and providing reasonable hikes for their clients' abilities.

All backcountry use and environmental protection regulations apply. Specific guidelines are outlined in the Requirements for Commercial Day Hiking Use, available through the Grand Canyon National Park Division of Concessions Management.

Bike Tour Commercial Use Authorizations

Commercially guided bike trips are authorized under the Incidental Business Permit (IBP) program. IBPs are mandatory for conducting commercial trips into the Park; their issuance is a courtesy not an entitlement. Requests for bike tour IBPs are handled through the Division of Concessions Management. Commercial services are not authorized until the IBP is finalized. Prospective permittees should allow two to four weeks for permit processing, and should not schedule any commercial trips to the Park prior to obtaining a fully executed IBP.
All applicants for an IBP will be required to meet the following requirements prior to issuance of an IBP

- Proof of liability insurance coverage (Certificate of Insurance) naming the United States Government as an additional insured. Minimum acceptable level of insurance is $300,000 per occurrence.

- Payment of all required fees. A nonrefundable $200 fee is charged for application and administration of the IBP, irrespective of the IBP's length. Entrance fees as required at the Entrance Stations will be paid by the permittee.

- Certification that all guides/leaders meet the following qualifications
    - •Must be 18 years of age or older.
    - •Must hold a valid Emergency Responder, Wilderness Advanced First Aid, or higher, Emergency Medical Services (EMS) certification.

The permittee must ensure that staff have the expertise to operate all services authorized under the IBP. The permittee must furnish the Park with a list that identifies staff members and their qualifications. A staff registration form must be submitted prior to working in the Park.

The maximum size for a commercially guided bike tour is 14, including guides. There should be no less than one guide/leader for every six clients. Bicycle use in wilderness areas is prohibited (36 CFR 4.30 (d)1).

Commercial bike tours will be limited to the following unpaved roads which are open to the public.

- Rowe Well Road
- Pasture Wash Road from FS 328 to South Bass Trailhead (W-9 and W9-A)
- Havasupai Point Road from Pasture Wash Road to Havasupai Point (W-9B)
- Grandview Entrance Road (E-10) from East Rim Drive to Grandview Entrance
- Desert View—Cedar Mountain Road (E-14) from Desert View to Cedar Mountain Entrance

Commercial bike tours are limited to roads specified in the IBP. All bikes must stay on designated roads. Off-road travel is prohibited.

Commercial bike tours must not be advertised as athletic achievements. The permittee is responsible for organizing and providing reasonable rides for their clients' abilities.

All backcountry use and environmental protection regulations apply. Specific guidelines are outlined in the Requirements for Commercial Bike Tours, available through the Grand Canyon National Park Division of Concessions Management.

Appendix J

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
GRAND CANYON NATIONAL PARK

CAVE ENTRY APPLICATION AND PERMIT

Permission is hereby granted to enter the following sensitive cave:

_____ _____ ____/____/____
(Cave Name) (Cave Number) (Date of Entry)

Approved by: _____ on ____/____/____

The group leader (18 years old minimum) will sign below in the first space, and will accompany the group at all times. The group leader assumes responsibility for the group's actions.

Your signature indicates you have read and understand all conditions of this permit.

Name (sign above, print below)	Age	Address and Phone Number
1. _____ *Trip Leader*	____	_____
_____		_____
2. _____	____	_____
_____		_____
3. _____	____	_____
_____		_____
4. _____	____	_____
_____		_____
5. _____	____	_____
_____		_____
6. _____	____	_____
_____	____	_____

IN CASE OF EMERGENCY CONTACT: _____

This permit authorizes the permittee to enter and explore the cave indicated on the reverse side of this permit. Persons signing this permit accept responsibility for informing themselves of the inherent dangers of exploring undeveloped caves, accept full responsibility for their conduct, and personal safety. The permittees shall hold harmless the Federal Government and it's employees, for any mental or physical injury or damages resulting from entering or exploring the above cave, and that the Federal Government assumes no responsibility therefore.

Removal or destruction of any natural formations, minerals, rocks, or artifacts in or near caves is prohibited. Strict adherence to all rules and regulations stated on this form is understood and agreed to.

Conditions of this Permit:

1. This permit is valid only on the date specified for cave entry.
2. This permit must be returned, even if canceling the trip.
3. The permittee copy must be in your possession while visiting the cave. All party members must sign their names, provide a phone number, and address before entering the cave. This permit is valid only for those listed on the permit.
4. The group leader must be over 18 years of age and accompany the group at all times.
5. The minimum number allowed on the trip is three (3) people, unless special permission is obtained.
6. The maximum number of people allowed on a trip is six (6) unless special permission is obtained.
7. Each person shall carry three (3) separate sources of light, a hard hat, and non-skid footwear.
8. For your safety please leave the gate key in a safe location just inside the gate, known to all members of your party.
9. The trip leader is responsible for replacing the lock and gate at the end of the cave trip.
10. All materials carried into the cave by the group must be removed and properly disposed of. The disposal of any human waste within caves is prohibited.
11. The permittee agrees that information concerning the location of this sensitive cave will not be dispersed, published, duplicated, or in any other way disseminated, unless permission is first obtained from the park service. Dissemination of cave location information can lead to vandalism or destruction of cave resources.
12. Failure to comply with any of the above requirements may result in curtailment of future cave-access privileges.

NOTICE: If you find a gate broken, please do not enter the cave, even though you have a valid permit. Entering the cave may destroy evidence needed by investigators. Notify the Park Service of any evidence of forced entry, or if you notice damage to cave resources.

If you find anyone doing damage to a cave, please get all possible information (names, date & time, vehicle descriptions, License numbers, etc.) and report the incident to the park service as soon as possible.

Please return this permit, and any cave gate keys, to Grand Canyon Science Center within seven working days.

Under Comments, please report any gates which are unlocked, have missing locks, or have locks in poor condition. Report any damage noticed in the cave.

COMMENTS:

Appendix K

Use Area Classification and Limits

Overnight Use-Area Code Characters and What They Represent

The three-digit codes used to reference the various overnight backcountry use areas, campsites, and campgrounds can be deciphered as follows:

First Character

The first character is always a letter and tells *where* the use area is in general terms.

Code	Location
A	on the north side of the Colorado River below the Canyon rim
B	on the south side of the Colorado River below the Canyon rim
C	within the popular Cross-Canyon Corridor
L	within the Lower Gorge
N	above the rim on the north side of the Canyon
S	above the rim on the south side of the Canyon

Second Character

The second character is always a letter and indicates the relative location of the use area from east to west. The eastern-most use area is designated by the letter "a" and the western-most is designated by the letter "z." The approximate location of the use area can be derived from its alphabetical relationship.

Third Character

Except when an area is limited to day use only, the third character is either the letter "G" or a numeral ranging from 0 to 9. This character signifies the following:

Code	Used only for
0	shared at-large use areas (i.e., when the first two characters of the code are shared with another use area)
9	at-large use areas where the first two characters are not shared with another use area
8	designated campsites near the Colorado River
7	designated campsites below the rim near perennial water
6 to 4	other designated campsites below the rim
3 to 1	designated campsites on the rim
G	designated campground within the popular Cross-Canyon Corridor

Figure K1: Use Area Codes, Limits, and Camping Classification
(A/L = At-Large camping, D/S = Designated Camping)

Use Area	Map ID	Opportunity Class	Large Group		Small Group	Camper Limit	Camp Type
Badger	AA9	Primitive	1		1	17	A/L
Blacktail Canyon	AU9	Wild	1	or	2	12	A/L
Boucher	BN9	Primitive	1		2	23	A/L
Boysag	LB9	Wild	1	or	2	12	A/L
Burnt Point	LK9	Wild	1	or	2	12	A/L
Cape Final	NA1	Threshold	0	or	1	6	D/S
Cape Solitude	SA9	Primitive	1		2	23	A/L
Cedar Mountain	SB9	Threshold	2		2	34	A/L
Cheyava	AJ9	Wild	1	or	2	12	A/L
Chuar	AF9	Wild	1	or	2	12	A/L
Clear Creek	AK9	Threshold	1		3	29	A/L
Cottonwood Creek	BG9	Primitive	1		2	23	A/L
Cremation	BJ9	Primitive	1		2	23	A/L
Deer Creek	AX7	Threshold	1		1	17	D/S
Diamond Creek	LG9	Wild	1	or	2	12	A/L
Eminence Break	SF9	Primitive	1		1	17	A/L
Eremita Mesa	SC9	Threshold	1	or	1	11	A/L
Escalante	BC9	Primitive	1		2	23	A/L
Esplanade	AY9	Primitive	1		2	23	A/L
Fishtail	AZ9	Wild	1	or	2	12	A/L
Fossil	BS9	Wild	1	or	2	12	A/L
Garnet	BR9	Primitive	1		2	23	A/L
Grand Wash Cliffs	LM9	Primitive	1	or	2	12	A/L
Grapevine	BH9	Primitive	1		2	23	A/L
Greenland Spring	AL9	Wild	1	or	2	12	A/L
Hance Creek	BE9	Primitive	1		2	23	A/L

Use Area	Map ID	Opportunity Class	Large Group		Small Group	Camper Limit	Camp Type
Hermit Creek	BM7	Threshold	1		3	29	D/S
Hermit Rapids	BM8	Threshold	1		1	17	D/S
Horseshoe Mesa	BF5	Threshold	2		2	36	D/S
Indian Hollow	AN9	Primitive	1		1	17	A/L
Jackass	SI9	Threshold	1		1	17	A/L
Kanab Creek	LA9	Primitive	1		2	23	A/L
Ken Patrick	NC9	Primitive	1	or	2	12	A/L
Kanab Point	NK9	Primitive	1		3	29	A/L
Lava	NN9	Threshold	1		1	17	A/L
Monument Cluster							
Horn Creek	BL4	Threshold	0		1	6	D/S
Salt Creek	BL5	Threshold	0		1	6	D/S
Cedar Spring	BL6	Threshold	0		1	6	D/S
Monument Creek	BL7	Threshold	1		3	29	D/S
Granite Rapids	BL8	Threshold	1		2	23	D/S
Nankoweap	AE9	Primitive	1		2	23	A/L
National	BU9	Wild	1	or	2	12	A/L
North Bass	AS9	Primitive	1		1	17	A/L
Olo	BT9	Wild	1	or	2	12	A/L
Outlet	NG9	Primitive	1		2	17	A/L
Palisades	BA9	Primitive	1		2	17	A/L
Parashant	LE9	Wild	1	or	2	12	A/L
Pasture Wash Cluster							
Signal Hill	SE1	Threshold	0		1	6	D/S
Ruby Point	SE2	Threshold	0		1	6	D/S
S. Bass Trailhead	SE3	Threshold	1	or	2	12	D/S
Pasture Wash	SE0	Threshold	1		1	17	A/L

Use Area	Map ID	Opportunity Class	Large Group		Small Group	Camper Limit	Camp Type
Phantom Creek	AP9	Wild	1	or	2	12	A/L
Point Sublime	NH1	Threshold	1		1	17	D/S
Powell Plateau	AT9	Primitive	1		2	23	A/L
Red Canyon	BD9	Primitive	1		2	23	A/L
Rider	AB9	Primitive	1	or	1	17	A/L
Robbers Roost	ND9	Primitive	1		3	29	A/L
Ruby	BP9	Primitive	1		2	23	A/L
Saddle Canyon	AD9	Primitive	1		1	17	A/L
Saltwater Wash	SH9	Primitive	1		1	17	A/L
Scorpion Ridge	AR9	Wild	1	or	2	12	A/L
Separation	LH9	Wild	1	or	2	12	A/L
Shinumo Wash	SG9	Primitive	1		1	17	A/L
Slate	BO9	Primitive	1		2	17	A/L
Snap Point	LL9	Primitive	1	or	2	12	A/L
Soap Creek	AB0	Primitive	1	or	2	17	A/L
South Bass	BQ9	Primitive	1		1	17	A/L
South Canyon	AC9	Threshold	1		1	17	A/L
Surprise	LJ9	Wild	1	or	2	12	A/L
Surprise Valley	AM9	Primitive	1		1	17	A/L
Swamp Ridge Cluster							
Fire Point	NJ1	Primitive	1	or	1	11	D/S
Swamp Point	NJ2	Primitive	2	or	2	22	D/S
Swamp Ridge	NJ0	Primitive	1		1	17	A/L
Tanner	BB9	Primitive	1		3	29	A/L
Tapeats Cluster							
Upper Tapeats	AW7	Threshold	1		2	23	D/S
Lower Tapeats	AW8	Threshold	1		1	17	D/S
Tapeats Ampitheatre	AV9	Wild	1	or	2	12	A/L
The Dome	LC9	Primitive	1	or	2	12	A/L

Use Area	Map ID	Opportunity Class	Large Group		Small Group	Camper Limit	Camp Type
Thompson Canyon	NB9	Wild	1	or	2	12	A/L
Toroweap Valley	NM9	Threshold	1		2	17	A/L
Trail Canyon	LF9	Wild	1	or	2	12	A/L
Trinity	AQ9	Wild	1	or	2	12	A/L
Tuckup Point	NL9	Primitive	1		3	29	A/L
Unkar	AG9	Wild	1	or	2	12	A/L
Vishnu	AH9	Wild	1	or	1	11	A/L
Walhalla Plateau	NA0	Primitive	1		2	23	A/L
Whitmore	LI9	Threshold	1		1	17	A/L
Widforss	NF9	Threshold	1		2	23	A/L

Figure K2: *Cross-Canyon Corridor Campgrounds and Use Limits*

Use Area	Map ID	Large Group	Small Group	Camper Limit
Bright Angel	CBG	2	31	90
Cottonwood (Summer)	CCG	1	11	40
Cottonwood (Winter)	CCG	1	11	16
Indian Garden	CIG	1	15	50

Figure K3: *Designated Day Use Areas in Wilderness*

Use Area	Map ID
Havasupai Point	HAV
Long Jim	LJM
Manzanita	MAN
Transept	TRA
Uncle Jim Point	UNJ

Appendix L

Natural Conditions

Of all the concepts dealt with in conservation history, the term *natural* is one of the most persistent and difficult to address due, in part, to its cultural, aesthetic and spiritual significance (Noss 1995:26). Anderson (1991) offered three criteria for assessing the relative naturalness of an area: (1) the amount of cultural energy required to maintain the system in its present state; (2) the extent to which the system would change if humans were removed from the scene; and (3) the proportion of the fauna and flora composed of native versus nonnative species. Although it may be difficult to define such concepts as *natural* (or *wilderness* or *wildness*, for that matter), the philosophy behind the original establishment of national parks and wilderness requires that we make the effort (Kilgore and Heinselman 1990:308).

Considerable confusion has resulted from a widespread misconception of the dynamics about ecosystems. Some envision these systems as having a natural balance or static equilibrium that in fact does not exist (Johnson and Agee, 1988:7). Although periods of stability may exist, and multiple levels of stability can be defined, park and wilderness ecosystems are described as nonequilibrium systems (Holling, 1978). According to some authors, a *balance of nature* occurs only over short and constrained periods. The constant in these systems, they maintain, is change (Grumbine 1992:61-63).

This fact is fundamental to establishing realistic goals for park and wilderness management (Johnson and Agee, 1988:7). Components of these ecosystems cannot be defined at a particular level that will unequivocally be perceived as natural. The word *natural* often evokes diverse value judgments difficult to reconcile. Some authors suggest that the tern natural has to be defined in terms of the special attributes of each park and wilderness area (Kilgore and Nichols 1995: 27). For example, plant species (e.g., ponderosa and pinyon pine) have reacted individually to climatic changes for millennia, so that the communities seen today on the landscape are in part a result of past climatic shifts and the differential colonization rates associated with each species (Brubaker 1988). They represent the state of the vegetation of the ecosystem today, but are not necessarily representative of some past equilibrium vegetation mosaic.

For fire, some authors suggest the NPS set specific ecosystem policy goals (e.g., fire policy goals) that vary somewhat from park to park and wilderness to wilderness, based on variables in fire history, fire behavior, fire effects, and fire responses (Kilgore and Nichols 1995: 27; Parsons and Botti 1996:30). A working definition for *natural*, developed for the 1983 Wilderness Fire Symposium, involved both the fire process and the resulting effects. According to this definition, a natural fire for any given ecosystem (1) burns within the range and frequency distribution of fire intensities, frequencies, seasons, and size found in that ecosystem before arrival of technologi-

cal man, and (2) yields the range of fire effects found in that ecosystem before the arrival of technological man (Kilgore 1985).

Even with this definition in mind, philosophical and policy questions remain about the appropriateness of specific restoration efforts. While the GMP (p.7) requires the restoration of altered ecosystems, the level and extent of all restoration techniques relies on a Minimum Requirement analysis (See Chapter13; Appendix D, Minimum Requirement Decision Process). In regard to large-scale techniques such as fire, wilderness managers must decide whether to (1) simply allow natural fires to burn; (2) reduce obvious fuel accumulations in certain zones with prescribed fires or other methods and then allow natural fires to burn; or (3) carefully restore natural stand structure to estimated presettlement conditions before allowing natural fires to burn (Bancroft, et al. 1985; Bonnicksen 1985; Bonnicksen and Stone 1985; Lucas 1985; Parsons, et al. 1986; Worf 1985).

While admitting that change is natural, we must also accept extreme fluctuation is abnormal in many ecosystems and, when caused by human activity, often threatens native biodiversity (Noss 1995:11). In protecting natural ecosystems, human-generated change must be constrained because nature has functional, historical, and evolutionary limits (Pickett, et al. 1992).

Ecological Integrity

A sound definition of integrity must be based on evolutionary and bio-geographic context (Noss 1995:20). For this Wilderness Management Plan, ecological integrity is defined as

> *...a state of ecosystem development that is optimized for its geographic location, including energy input, available water, nutrients and colonization history. For national parks, this optimal state has been referred to by such terms as natural, naturally evolving, pristine and untouched. It implies that ecosystem structures and functions are unimpaired by human-caused stresses and the native species are present at viable population levels* (Woodley 1993; See Noss 1995:20).

Population Viability

Population viability should be considered over centuries and should be highly probable, e.g., 95-99% probability using the best available population viability analysis (PVA) models (Noss 1995:11).

Biodiversity

This Wilderness Management Plan adopts the definition of biodiversity from the Keystone Report (1991:6) as

> *...the variety of life, and its process; including the variety of living organisms, the genetic differences among them, and the communities and ecosystems In which they occur.*

Native biodiversity extends this definition to include *viable populations of all native species in natural patterns of abundance and distribution*.

Appendix M

Wild and Scenic Rivers

Public Law 90-542, the Wild and Scenic Rivers Act of 1968, as amended and supplemented, establishes a national policy that certain selected rivers of the nation containing "outstandingly remarkable" values shall be preserved in their free-flowing condition and protected for the benefit and enjoyment of present and future generations (*NPS Management Policies*, Chapter 4:26-31).

In response to the 1990 Special Directive 90-4, *Determination of Rivers on National Park System Lands which are Eligible for National Wild and Scenic Rivers System Designation*, 285 miles of the Colorado River and its tributaries in Grand Canyon National Park were reported as eligible for consideration as wild or scenic rivers (see GMP 1995:3). The GMP states that the NPS will actively pursue the designation of eligible segments of the Colorado River and its tributaries as part of the national wild and scenic rivers system.

The Wild and Scenic Rivers Act provides two methods for adding river segments to the system. The first method is by an act of Congress to designate a river directly or following a Congressionally mandated study and a positive recommendation by a study team for designation. The second method is for the Secretary of the Interior, upon application by a governor, to add a state designated river to the National System (USDI and USDA 1982).

Suitability Study

Suitability studies are initiated by Congress under Section 5(a) of the Act, or by a Federal land management agency as part of its ongoing land management planning process under Section 5(d).[1] Content of the study as provided in Section 4 of the Act includes:

- a determination of the suitability of the river for inclusion in the national system.
- a description and analysis of existing protection, current land ownership, and use in the study area.
- alternatives for administration of the river area that should be included in the system as well as an alternative proposing that no action be taken to add the river to the national system.
- an analysis of the impacts of the proposal and alternatives, including benefits and costs.
- a record of consultation and coordination with other agencies and interests and public involvement during the study.

The basis for the judgment will be documented in the study report (NPS 1990:39457). The determination of whether a river area contains *outstandingly remarkable* values is a professional judgement on the part of the study team. Rationales for proposing designation include, but are not limited to, 1) protection of park resources from internal or external threats, 2) to extend into or out of a park a designation or proposed designation of the river on other public lands, 3) to recognize the

outstanding values of the river, or 3) as a perceived aid in managing a river area in the park.

River study reports contain an NPS position on which of the alternatives presented should be selected. Congress may request additional input from the NPS. In any event, an administrative process is required environmental assessment or environmental impact statement must be prepared to evaluate the environmental implications of the recommendation.

[1] Section 5(d) states that *[i]n all planning for the use and development of water and related land resources, consideration shall be given by all Federal agencies involved to potential national wild, scenic and recreational river areas, and all river basin and project plan reports submitted to Congress shall consider and discuss any such potentials. The Secretary of the Interior and the Secretary of Agriculture shall make specific studies and investigations to determine which additional wild, scenic and recreational river areas within the United States shall be evaluated in planning reports by all Federal agencies as potential alternative uses of the water and related land resources involved.*

Appendix N

Developing a Regional Wildlife Conservation Strategy

Developing a conservation strategy for wildlife, including large carnivores, requires a concerted, integrated research and management effort consisting of at least ten steps:

Step 1

Confirm The Focal Region For The Strategy

In this case, it would be the Grand Canyon ecoregion (*Resource Management Plan 1997a*:2). This area consists of protected core areas (national parks, national monuments and national recreation areas, etc.) with significant defacto wilderness lands. In order to meet the needs of viable populations of native species including large carnivores, the study area may need to be reconfigured as new information becomes available. Significantly, no single conservation area can be expected to function as a self-sustaining island. The land manager's immediate concern is to define a focal region in which implementation of the strategy will effectively counter the continuing erosion of large terrestrial carnivore range (Paquet and Hackman 1995:30).

Step 2

Review the Region's Ecological History

There are two reasons why this is important. First, it is useful to know what changes have occurred in the landscape, especially since European settlement. Among other things, this record will help establish benchmarks for restoration, and document the temporal and spatial relationship between human activities and wildlife and carnivore status. Secondly, a review could be designed to obtain important information about how residents of the region, especially private landowners, perceive the proposed conservation program. This is an important step in enlisting local support (Meffe and Carroll 1997).

Step 3

Determine Conservation Goals for Target Species

Managers can estimate the status of populations using Population Viability Analysis (PVA) (Shaffer and Samson 1985; Suchy, et al. 1985; and Boyce 1992). This will require better information on sex ratios, mortality and life span, social structure, population size and changes in carrying capacity, and genetic variability. Long-term monitoring of a species in the field can reveal temporal changes in population size, and help to distinguish short-term fluctuations from long-term declines. Demographic studies are particularly valuable in assessing the long-term resilience of a population. In undertaking PVA the efforts should focus initially on species for which sufficient data is available for exploratory modeling, e.g., the gray wolf (U.S. Department of the Interior, U.S. Fish and Wildlife Service 1996).

Step 4

Improve Understanding Of The Implications Of Small Population Sizes

Step 5

Determine maximum sustainable annual mortality rates, and for exploited species, incorporate a system to regulate nonnatural deaths.

This task must acknowledge the transboundary movements of the species involved (Paquet and Hackman 1995:31).

Step 6

Identify essential ecological requirements and long-term ecological processes that affect individual species.

Managers can use various methods of habitat evaluation, including interaction assessment (INTASS), multispecies matrix models, multispecies virtual population analysis (MSVPA), Gap Analysis Habitat Evaluation Procedures (HEP), and cumulative impacts assessment.

Step 7

Provide details on the interspecific relationships of species that constitute the large carnivore associations in the Grand Canyon ecoregion.

A strategy based on an ecosystem approach has to encompass community and population level relationships (see Laundre and Lopez-Gonalez 1993). Carnivore community structure is thought to be influenced by predator size relative to prey size (Rosenweig 1966), spatial and temporal differences in habitat use (Bothma et al. 1984), habitat configuration (Rabinowitz and Walker 1991), and interspecific relationships (Rosensweig 1966; Paquet and Hackman 1995:31).

Step 8

Determine tolerance limits of sensitive species for human activities.

Understanding how sensitive species can be preserved on multiple-use land including areas of intense human activity needs expanding. It is not known how close animals already are to a threshold level of disturbance in which direct and cumulative effects will result in disruption. (Paquet and Hackman 1995:31).

Step 9

Design a Network Reserve Strategy..

Assuring long-term survival of critical wildlife species, such as large predators, require enormous areas. For example, researchers estimate that an effective population of mountain lions, approximately 1000-2000 adults, would require about 100 million acres

of wildland (Jordan 1991; Noss 1991). Single reserves of this magnitude do not exist in the Grand Canyon ecoregion, but the problem becomes manageable when we recognize that viable populations can be distributed over a much larger area in smaller protected units comprising the metapopulation. Metapopulations are discontinuous populations distributed over spatially disjunct patches of suitable habitat separated by intervening less-suitable habitat (McCullough 1996). Generally, viable populations are possible—provided effective connectivity exists between protected subpopulations of the metapopulation.

Although Grand Canyon National Park is not large enough to support long-term viable populations of all native species, especially species with large area requirements, linking other core areas by corridors holds great promise (Noss and Cooperrider 1994:144). In simplified form, the regional reserve network model consists of reserves connected by broad corridors, surrounded by a gradation of multiple-use buffer zones, and connected to other biogeographically appropriate areas by interregional corridors (Noss and Cooperrider 1994:146).

Core areas consist of protected areas such as existing National Park Service units, BLM areas of critical concern, wilderness areas (designated and proposed), research natural areas, certain State preserves, and national wildlife refuges. An emphasis on restoring native biodiversity and ecological processes (e.g., fire), and reducing road densities would possibly qualify areas like the Grand Canyon Game Preserve (North Kaibab, USFS) and BLM resource conservation areas as core areas.

Multiple-use buffer zones endure a greater range of activities than core areas, but still provide important ecological functions. They enlarge the effective size of reserves and may contribute to overall metapopulation persistence by at least temporarily supporting resident individuals while serving as connections between source habitats (Noss and Cooperrider:150; McCullough 1996). The vast areas of BLM public lands and national forests provide excellent opportunities for this ecological function.

Connectivity, essentially the opposite of fragmentation, is fundamental to the concept of regional reserve networks. Instead of breaking the landscape into pieces, connectivity seeks ways to preserve existing connections and restore severed connections. The connectivity of interest is *functional connectivity*, usually measured according to the potential for movement and population interchange of target species. (Noss and Cooperrider:150-151). Connectivity implies more than physical corridors. For species that disperse in more or less random directions, such as goshawks and spotted owls, connectivity is affected more by the suitability of the overall landscape matrix than by the presence or absence of discrete corridors. Multiple-use landscapes with low road density and minimal human disturbance generally

provide adequate connectivity for most native organisms (Noss and Cooperrider 1994:151).

For corridors or other habitat linkages to serve conservation goals, their functions must be stated explicitly and analyzed carefully (Soule 1991). While the scientific literature has concentrated on the discrete, species-specific conduit function of corridors, habitat linkages have several functions affecting many species. Landscape linkages (1) provide dwelling habitat for plants and animals and (2) serve as a conduit for movement. The conduit role (a) permits daily and seasonal movement of animals; (b) facilitates dispersal and consequent gene flow between populations, and rescues small populations from extinction; and (c) allows long-distance range shifts of species, such as in response to climate change (Noss and Cooperrider 1994:152).

Step 10

Implement Interagency Cooperation

The General Management Plan (pp. 8-9) establishes the goal to carry the NPS concern for the environment beyond Park boundaries, including the protection of Park resources and values from external influences and to understand, assess, and consider the effects of Park decisions outside the Park as well as inside.

Appendix O

Campsite Monitoring Manual

Rapid Campsite Assessment (RCA)

Goals

To provide basic data for every campsite in the wilderness backcountry that is reasonably located.

To provide managers with an accurate representation of campsite location, distribution, and condition in Use Areas with a range of use levels and management practices for the Threshold, Primitive, Semi-Primitive Mechanized, and Wild Opportunity Classes.

Purpose

- To gather information that provides evaluation of the standards for campsite management described in the Wilderness Management Plan concerning:
  - Campsite Distribution
    - Number of campsites in a square mile area
    - Amount of barren core area of campsites in any ten-acre area within Use Areas
  - Campsite Condition

- To provide a basis for management actions required to meet management objectives that may include treatments such as trail and campsite rehabilitation, site restoration, and/or other strategies to reduce impacts to the physical and social environments.

Method

The Rapid Campsite Assessment (RCA) method was developed to collect as much information on campsites as possible during a routine backcountry patrol or field session. The RCA has also been designed so that inventories are repeatable, and the campsite-monitoring program could continue on a long-term basis. The collection of campsite information should also be consistent over time.

Tools needed for a field session include
- RCA Data Sheets
- A camera with 35-50 mm lens and color slide film
- Data Sheets and slides from previous RCAs of the Use Area
- USGS quad map of area 7.5 Minute Series. (Copies may be used in the field then transferred to master copy)
- Compass
- Clipboard and/or *Write in the Rain Notebook*, pens, etc.
- 50-foot measuring tape (optional)

Instructions for Conducting RCA and Completing Data Sheet (Attached)

The Rapid Campsite Assessment Data Sheet is relatively self explanatory. The format of the Data Sheet corresponds to the dBase III+ program used for data storage and analysis. It is also important to remember that when evaluating impacts, a certain level of subjectivity is in order.

Campsite Number

This number should correspond with the previous inventory. If an inventory has not been conducted, field staff should number campsites consecutively as the inventory proceeds.

The following may be completed prior to field work:

Use-Area ID

The three-character code used to identify use areas.

Use-Area Name

Full name of use area such as “Hermit Creek.”

Recorder(s)

Personnel conducting inventory or monitoring.

Date

Survey month, day and year.

Date of Last RCA

Date of last monitoring work from forms on file. If this is the first inventory, mark as *Baseline.*

General Location and Description

Provide enough information so that someone who’s never been there before could find the site. Note GPS coordinates, if available, and compass bearings. Information from previous RCA, and the slides will help locate the campsite.

USGS Quad

List the 7.5 Minute Series quad map on which campsite is located.

The following information will be recorded in the field:

Barren-Core Area

A barren-core area is typically the most obvious indicator of impact. Characteristics of barren core areas include: devoid of vegetation and organic litter, compacted soil, and trampled perimeter vegetation.

- Record the number of barren-core areas within the individual campsite; “tent spaces,” cooking, and/or social areas, etc.
- Measure the size of each barren-core area with a tape, or by pacing. Record the dimensions of each barren core, enter as core A, B, C**,** etc.
- Record the total barren core area. This may be calculated on site, or later.

Impact Evaluation

This is a total of ratings given to the various impacts observed at the site.

- Core Area
  Assign a rating (0 to 10) based on total from (c) above. Which is highest and lowest.

- Core Soil Compaction
  Determine soil compaction by firmly poking your finger onto the area. If there’s any depression, consider this a rating of two. Use your best judgement, considering current environmental conditions.

•Access Trails
Number of distinct trails leading to/ from the campsite. This does not include the main trail.

•Perimeter Vegetation Damage
This does not include tree damage. The most common damage observed is a result of trampling; however, more severe impacts such pulled grass for bedding has also been observed.

•Tree Damage
Determine whether or not damage is new. Compare to previous data sheets, if any.

•Access Trail Erosion
Determine if over two inches of erosion has occurred on access trails. Record number of trails affected.

•Fire Impacts
Evaluate evidence of fire impacts. Note presence of charcoal, fire scars, etc.

Total Impact Rating

Record impact rating by adding the score for each variable (described above).

Condition Class Rating

Record condition class rating based on total impact score.

Photo Log

Color slides are used in the field for relocating campsites, and for evaluating change over time. Any changes seen should be noted in the comments section. It may not be necessary to duplicate photos each monitoring period if no changes are noted. The duplication of photos provides a tool for illustrating backcountry campsite condition. When taking baseline photos, it is useful to include landmarks within the frame, or take general location photos, and label accordingly.

The photo log enables you to transfer this information to the slides when they have been developed. It is also useful to carry a separate photo log to record information other than the campsite slides. Noting the compass bearing enables the next monitor to relocate the photo direction. The description should be brief such as: “Cores A and B looking SSE from 16' away,” or, “245° 10' away from trail.”

Overall Condition Rating

Based on previous information and judgement, rate the condition of the campsite in comparison to the previous monitoring session. Circle “Baseline” if this is the initial inventory. This information is used in evaluating the overall condition of wilderness campsites by use areas, and for determining a monitoring schedule.

Comments

This may include additional information (1) useful in relocating the site, or if it was not reasonably relocated, (2) reference to archeological sites, and distance to water, (3) changes from previous RCA, (4) notes on impacts or

improvement of site, and (5) observations or recommendations for management action.

After Completing the Field Session

- Make sure information on Data Sheet is complete and legible.
- Send in slides for processing. Label when returned (see below).
- Complete *Campsite Monitoring Trip Report* to summarize activities and campsites monitored.
- Plot all campsites on master map.
- Return report, data sheets and labeled slides to master file at the Science Center.

Slide Labeling

All slides should be labeled with use-area name and number, photo number, campsite number, date, and description similar to that recorded on data sheet.

RAPID CAMPSITE ASSESSMENT (RCA) DATA SHEET

1. Campsite #_____ 2. Use Area ID_____ 3. Use Area Name _____
4. Recorder(s)_____ 5. Date_____ 6. Date of Last RCA_____
7. General location & Description (GPS) _____

_____

_____

8. USGS Quad _____
9. **BARREN CORE MEASUREMENTS:** Number of barren core areas _____
   Size of each **A:** ___x___=___ **B:** ___x___=___ **C:** ___x___=___ **D:**___x___=___ **E:** ___x____=_____
   TOTAL of all barren core areas in square feet: _____
10. **IMPACT EVALUATION:** **RATING**
   Core Area Rating: 0:<25 2:26-50 4:51-100 6:101-250 8:251-500 10: >500 _____
   Core Soil Compaction as result of human impacts:
   0: Minimal surface disturbance
   2: Surface Compacted but not cement like
   3: Surface cement like in compaction _____
   Access Trails: 0: No distinct trails 1: 1-2 distinct trails
   2: >2 distinct trails _____
   Perimeter Vegetation Damage: 0: Not apparent off trails
   2: Obvious damage to perimeter vegetation _____
   Tree Damage: 0: Not evident 1: Old damage 3: New damage _____
   Access Trails eroded >2 inches below ground surface: 0: No 1: Yes _____
   Number of trails eroded below ground surface: _____
   Permanent impacts from fires 0: Not evident 1: Small impact 3: Large impact _____

TOTAL IMPACT RATING _____

Impact Rating: 0 - 5	Condition Class #1
6 - 10	#2
11 - 15	#3
16 - 20	#4
20 - 25	#5

CONDITION CLASS RATING _____

Photo Log: **Roll #**___ Focal length of lens ____
Photo # ____ Compass Bearing____ Description _____
Photo # ____ Compass Bearing____ Description _____
Photo # ____ Compass Bearing____ Description _____
Photo # ____ Compass Bearing____ Description _____

Overall Condition Rating based on comparison of previous RCA (circle one):
No Change Positive Change Negative Change Baseline Other _____

Comments: (Use back for maps)

CAMPSITE MONITORING TRIP REPORT

Trip Date(s):_____ **Name(s)** _____
Use Area Name:_____ **Use Area Number:**_____

Campsites Inventoried (Numbers and Locations):

Campsites Located but not Inventoried:
(Describe where they are located. Have they been plotted on the map?)

Description of area that was surveyed sufficiently to find approximately 95% of all existing campsites:

Description of areas that need additional surveys to find 95% of campsites:

OTHER COMMENTS:

POST-TRIP CHECKLIST:

___ 1. Location and number of all campsites plotted on map?
___ 2. Sketch maps for cluster sites completed (Redrawn for clarity)?
___ 3. Data sheets checks to ensure accuracy?
___ 4. Photographs labeled and place in folder with data sheets?

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